2007 University of Arkansas at Pine Bluff Combined Research and Extension Annual Report

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I. Report Overview

1. Executive Summary

The 1890 Research and Extension programs at the University of Arkansas at Pine Bluff are administered by the School of Agriculture, Fisheries and Human Science. The School consists of three academic departments, Agriculture, Fisheries and Human Sciences. Federal, state and private funds supported seventy seven ongoing projects with most of the research projects conducted at the UAPB campus site, with some activities occurring at the UAPB Lonoke and Marianna farm sites. Additional studies were conducted on cooperating farm sites, the Felsenthal National Wildlife Refuge, Arkansas River, and abroad in eight countries: Canada, China, Mexico, Nigaragua, Peru, South Africa, Guyana, and Puerto Rico.

Faculty submitted forty nine proposals for external funding to support Research and Extension activities. These proposals generated $2,769.714 in new money from external sources for programming. The knowledge gained by these research activities were extended to families and communities through a variety of outreach and Extension programs. The extension program has structured programs in 29 counties with staff housed in 10 counties.
Research and Extension in Agriculture are conducted in the areas of plant science, animal science and agricultural economics. The efforts in the Department of Human Science are directed toward human nutrition, food safety and family life.

The Agriculture and Human Science components of the Research and Extension programs are designed to provide information and assistance to small-scale and limited-resource farmers and disadvantaged families and youth. The Aquaculture/Fisheries program supports both the state's aquaculture industry and recreational fishing, an avenue for enhancing tourism as an economic engine for the state.

Total Actual Amount of professional FTEs/SYs for this State

Year:2007	Extension		Research	
	1862	1890	1862	1890
Plan	0.5	23.5	0.0	21.3
Actual	0.0	15.7	0.0	17.0

II. Merit Review Process

1. The Merit Review Process that was Employed for this year

- Internal University Panel
- External Non-University Panel
- Expert Peer Review

2. Brief Explanation

Merit/Peer Review Process for 2007 – Three new research proposals underwent internal merit review during 2007 and were approved. The projects contributed to three established research programs: Plant Breeding and Biotechnology, Herbs and Medicinal Crops, and Alternative Crop Production.

Efforts in response to the 2006 CSREES Review - In response to the recommendation to implement cross-cutting integrated program that involves all departments in the School as well as research, Extension and teaching programs, a School-wide committee is working with a Community Advisory Committee to design a Community Improvement Project for North Pine Bluff. The project is structured to include programming in family life, environmental quality and economic stability. The Economic Research and Development Center of the University's School of business is collaborating in developing and implementing the program.

III. Stakeholder Input

1. Actions taken to seek stakeholder input that encouraged their participation

- Use of media to announce public meetings and listening sessions
- Targeted invitation to traditional stakeholder groups
- Targeted invitation to traditional stakeholder individuals
- Targeted invitation to selected individuals from general public
- Survey of traditional stakeholder individuals

Brief Explanation

The 1890 Research and Extension programs at the University of Arkansas at Pine Bluff continue to require Extension and Research personnel to develop their own stakeholder input mechanism. This input will differ depending on the structure of the program. Stakeholder input is obtained from one-on-one contact and evaluations conducted on site. Extension and Research personnel seek additional stakeholder input at producer meetings, professional meetings, workshop and focus groups.

The Agriculture Research and Extension Advisory Council, a means of obtaining formal stakeholder input, was organized in 2004 and continues to be an effective means of gaining input. The Agriculture Research and Extension Advisory Committee last met February 12, 2008.The input from the 2006 session was incorporated into the 2007 outreach efforts (more extensive work with Sweet Potatoes, enhanced technical support for value-added processing, and expansion of the role and geographic scope of the Small-Farm Program). Each issue was addressed through program initiatives as allowed by available funding. Membership on the council will change with the need of Research and Extension programs as determined by 1890 administration and council recommendations. Other stakeholder input is facilitated through producer meetings and various partnership ventures. The Small Farm Program offers an additional avenue for stakeholder input through producers involved in the program. Through this program, 13 producer meetings were held in 2007 which led to the development of two external grants to support to risk management and farm management outreach education.

The UAPB Aquaculture/Fisheries Center (AFC) prides itself on the level, scope, and effectiveness of its interactions with stakeholders. Input and interaction with stakeholders occurs on an almost daily basis with personnel in the Center. Individual farmers, representatives of trade associations, and board members interact frequently with Center Researchers and Extension Specialists. The interaction often is initiated with a request for some specific type of information. The specific questions often expand into broader discussions as the state of knowledge in particular areas through which additional research needs become readily apparent.

For the natural fisheries Research and Extension areas, the primary stakeholder defined for the UAPB Aquaculture/Fisheries Center is the Arkansas Game and Fish Commission (AGFC). The increased interaction with the Arkansas Game and Fish Commission in recent years has facilitated greater communications. Formal input is obtained through the representation of the Arkansas Game and Fish Commission on UAPB's National Fisheries Advisory Council. Additional opportunities for interaction and input are available at the statewide meeting of the Arkansas Chapter of the American Fisheries Society (AFS). Many AGFC managers and biologists attend these meetings. Also, the increasing involvement of Center scientists on committees of the Southern Division of the AFS and at the national level provide opportunities for additional input because a number of AGFC personnel continue to be active in those settings. In 2005, the AFC Center Director was asked to chair a task force for AGFC. While the task force focused on its specific charge, the frequent meetings throughout the year at the AGFC headquarters and the AGFC representatives on the task force resulted in much valuable exchange of information and input into directions for Research and Extension programs. The AFC Center organized two workshops for AGFC personnel, both hosted at UAPB in 2006. More than 45 individuals from AGFC attended each workshop.

2(A). A brief statement of the process that was used by the recipient institution to identify individuals and groups stakeholders and to collect input from them

1. Method to identify individuals and groups

- Use Advisory Committees
- Open Listening Sessions
- Use Surveys

Brief Explanation

Stakeholder input is a core component of all 1890 research and Extension programs. Means for acquiring input varies depending upon the nature of the research or Extension program and the diversity of relevant stakeholders. These include local and state agencies, community groups, producers and other targeted audiences, as well as business and industry groups. Producer meetings, advisory groups, conferences, and focus group discussions are major means for gaining input.

Our stakeholder input process is structured individually by the three departments to accommodate differences in audiences served. This approach is taken because the clientele needs for research and Extension – in programs other than aquaculture are broad in scope, local in nature and geographically limited. While the Aquaculture Program provides research and Extension support for all aquaculture producers in the state, other programs support under-served and diverse audiences in a specific number of counties.

Specialists in agriculture, family and community programs work with 1862 county agents, as requested, to organize clientele groups through community-based organizations, schools and the faith-based community. Both research and Extension programs in Aquaculture/Fisheries and in Agriculture and the Family and Consumer Sciences Extension program utilize an advisory committee structure as a major component of the stakeholder input process. The Human Sciences Research program employs other mechanisms to obtain stakeholder input.

2(B). A brief statement of the process that was used by the recipient institution to identify individuals and groups who are stakeholders and to collect input from them

1. Methods for collecting Stakeholder Input

- Meeting with traditional Stakeholder groups
- Survey of traditional Stakeholder groups
- Meeting with traditional Stakeholder individuals
- Survey of traditional Stakeholder individuals

Brief Explanation

The Agriculture Research and Extension Advisory Council

The Agriculture Research and Extension Advisory Council (AREAC) meets annually

but members are in continuous contact with research and Extension faculty and administrators on a less formal basis. Membership includes 12 producers engaged in a variety of agricultural enterprises (i.e. alternative crops, row crops, livestock, etc.) four (4) current and retired Extension professionals (two from 1890 and two from 1862) one federal agency (NRCS) representative, one state agency (Arkansas Department of Environmental Quality) representative, and one industry (Monsanto) representative.

The Aquaculture-FisheriesCenterof Excellence Advisory Committee

The primary advisory committee that provides feedback and input into the UAPB Aquaculture Fisheries Program is the National Fisheries Advisory Council and it meets annually. It is primarily focused on aquaculture operations although it is inclusive of natural fisheries. The various committee members represent the Arkansas aquaculture industry (catfish, baitfish, ornamental fish, and sport fish hatcheries, both grow-out operations and processing plants), the industry service sector (feed mills, Extension and research), state and federal natural resource management authorities (U.S. Fish and Wildlife Service, Arkansas Game and Fish Commission) and the University of Arkansas at Pine Bluff. Some committee members also serve as representatives for other state and national aquaculture industry organizations, so that these individuals contribute a much broader perspective to advisory committee meetings than their formal capacity might otherwise suggest.

In addition to the National Fisheries Advisory Council, there are a number of advisory subcommittees that specialize in specific areas and meet regularly to contribute towards the Aquaculture/Fisheries Center's program planning and development. These include the UAPB Facilities Subcommittee, the Catfish Subcommittee, and the Lonoke Aquaculture Subcommittee. Members of the Facilities Subcommittee meet on a regular basis to plan UAPB Aquaculture/Fisheries Center facility expansion and develop resources for new facilities.

The Catfish Subcommittee meets twice a year in Lake Village, Arkansas, to plan the mid-year and annual educational meetings that are hosted by UAPB for the Catfish Farmers of Arkansas. The Chicot County Extension programs also derive their input from this committee's advice.

The Lonoke Aquaculture Subcommittee meets once a year to plan the annual UAPB Lonoke Aquaculture Workshop, which is primarily focused on bait and ornamental fish aquaculture. The Extension programs operating in Lonoke County gain stakeholder input into program development from these meetings. The Lonoke County Agricultural Office, that operates as part of the 1862 State Extension Service also hosts an annual advisory committee meeting to acquire aquaculture industry input and feedback for their Extension program. UAPB Aquaculture/Fisheries Center staff are invited to participate in these meetings to facilitate information transfer between the 1890 Cooperative Extension Program, the 1862 State Extension Service and industry members.

The Young Scholars Advisory Committee Structure

A Young Scholars Task Force, including some of the children and parents enrolled in the program, oversees the planning, implementation and evaluation of the program in both counties. One of the children serves as chair of the task force while another child serves as secretary. In addition to program parents and children, membership includes representatives of partnering agencies, governmental, officials, and state legislators.

3. A statement of how the input was considered

- In the Budget Process
- To Identify Emerging Issues
- In the Action Plans
- To Set Priorities

Brief Explanation

The University is in the process of establishing a Foundation Seed Program for sweet potatoes to support a developing sweet potato industry in eastern Arkansas as a result of input from the Agriculture Research and Extension Advisory Council. Federal and state governments and some private funding was combined to build a sweet potato processing and storage facility in the Delta where soil conditions are ideal for growing sweet potatoes. The facility manager and several producers approached the university to provide additional support for the emerging industry (the University has provided production support related to sweet potatoes for many years). We met several times with various groups and individuals to determine the scope of the additional work required and determined that improving the genetics and quality of the planting material was the most feasible approach. Lacking resources to implement the program, we are exploring funding opportunities via state appropriations and private funding to implement the program. Several opportunities appear promising and we anticipate program start-up as soon as funds become available.

Brief Explanation of what you learned from your Stakeholders

Need additional help and support for the Sweet Potato Industry in Eastern Arkansas. A priority has been set to establhish a Foundation Seed Program. Additional funding is needed to support the this program initiative.

IV. Expenditure Summary

1. Total Actual Formula dollars Allocated (prepopulated from C-REEMS)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	1533405	0	1822123

2. Totaled Actual dollars from Planned Programs Inputs

	Extension		Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
Actual Formula	0	1478361	0	1779045
Actual Matching	0	1429009	0	1822123
Actual All Other	0	382990	0	0
Total Actual Expended	0	3290360	0	3601168

3. Amount of Above Actual Formula Dollars Expended which comes from Carryover funds from previous years

Carryover	0	244214	0	221339

V. Planned Program Table of Content

Program #1

V(A). Planned Program (Summary)

1. Name of the Planned Program

Horticulture Production

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plar		100%		100%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	1.7	0.0	0.0
Actual	0.0	1.3	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	187104	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	101537	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

1). Conducted 11 training sessions that involved 470 participants.

2). Provided current horticultural production information to over 1000 stakeholders through 12 monthly news columns/articles that were featured in 20 South East Arkansas newspapers. The articles were also posted on the University of Arkansas Cooperative Extension Service web site (www.uaex.edu) through which a larger audience was reached.

3). Provided technical advise through 26 farm visits and several telephone and e-mail communications.

4). Research: Continued the evaluation of 6 snap bean cultivars and 10 blackberry cultivars for adaptation by limited-resource and small-scale farmers. The evaluation trials completed the second year of data collection in 2007. The snap bean cultivar evaluation trial will conclude in 2008. The blackberry cultivar evaluation trial is scheduled to extend through 2009.

2. Brief description of the target audience

The target audience is the small-scale and limited-resource farmers. Many of these individuals lack adequate economic, technical or social resources to maintain viable operations on row-crops. Horticultural crops production helps them increase farm profitability and improve their quality of life.

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	100	150	10	20
2007	1500	2000	35	30

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- 1) Conduct training of county extension staff, master gardeners, limited resource farmers and 4-H club members, 2) write mon

Year	Target	Actual
2007	2	1470

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	Develop monthly columns/articles addressing production trends and concerns

Outcome #1

1. Outcome Measures

Develop monthly columns/articles addressing production trends and concerns

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	12	12

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Limited-resource and small-scale farmers, and extension agents assisting the above mentioned stakeholders.

What has been done

11 training sessions involving 470 participants were conducted.
12 monthly articles/columns on a wide range of horticultural crops production topics were developed reaching over 1000 stakeholders.
26 farm visits were conduted.
2 research projects, namely Snap bean and Blackberry cultivar evaluation trials were conducted.

Results

Over 1470 stakeholders received knowledge in current horticultural crops production techniques through training, news articles and farm visits. 6 snap bean cultivars and 10 blackberry cultivars were evaluated for adaptation by limited-resource and small-scale farmers.

4. Associated Knowledge Areas

KA Code	Knowledge Area
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Public Policy changes
- Competing Public priorities
- Competing Programatic Challenges

Brief Explanation

Natural disaster - Freeze damage: Unexpected freezing temperatures damaged blackberry blooms in spring 2007. No yield data was available.

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

-

Evaluation Results

No evaluation done during this period.

Key Items of Evaluation

N/A

Program #2

V(A). Planned Program (Summary)

1. Name of the Planned Program

Human nutrition

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
702	Requirements and Function of Nutrients and Other Food Cor		0%		50%
703	Nutrition Education and Behavior		0%		50%
	Total		0%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.0	0.0	0.9
Actual	0.0	0.0	0.0	0.4

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	0	98749
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	0	44309
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The planned program was not implemented because the old program was not completed and was extended until September 2008. Data from the post-survey of feeding yogurts containing probiotics among preschoolers in Pine Bluff, Arkansas, were presented at the 2008 Rural Life Conference. A workshop for parents of children who participated in the feeding study was held fall 2007 at the department of Human Sciences in the University of Arkansas at Pine Bluff (UAPB). The workshop was attended by 18 parents, and 26 students and head start teachers. Results of the post-feeding questionnaire-survey were explained by the principal investigator Dr. Makuba Lihono and the technician Ms. Flavelia Stigger. The audience suggested that the education about the choice of yogurts containing probiotics be extended beyond the audience of the parents of preschool children to include all parents and adults. Preparation is underway for education of parents in Pine Bluff about the health benefits of yogurts containing probiotics and increased consumption of dairy products in children during the second half of the Spring semester. Workshops will be conducted on campus to reach students who are parents and off the campus at sites to include churches. We are targeting to reach about 200 parents during these education sessions. Pre and post-surveys will be conducted to find out the impact of the education sessions on consumption of dairy products in children of the parents involved.

2. Brief description of the target audience

Parents of children who participated in the yogurt feeding study; Parents of children who did not participated in the feeding study; Teachers of Head Start programs which participated in the feeding study (Haley Street, Gabe Meyer West, and David C. Vaughn Head Centers) in Pine Bluff, Arkansas; and students from the department of Human Sciences, UAPB, Pine Bluff, AR.

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	50	50	50	250
2007	34	200	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of classes per month, number of shopping workshops, number of tasting workshops, and number of recipe demonstra

Year	Target	Actual
2007	50	34

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	Attitudes, Opinions, Awareness, knowledge, education, behavior, increased consumption of low fat dairy products, reduced Body Mass Index (BMI), increased Bone density, improvement of foods offered at home and in schools, health.

Outcome #1

1. Outcome Measures

Attitudes, Opinions, Awareness, knowledge, education, behavior, increased consumption of low fat dairy products, reduced Body Mass Index (BMI), increased Bone density, improvement of foods offered at home and in schools, health.

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	50	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

There has been a decrease in the consumption of dairy products in children in the US. Parents who are aware of the health benefits of yogurts and dairy products will provide more yogurts containing probiotics and dairy products to their children. This will be beneficial in gastro-intestinal health and will increase calcium and iron intake in these children. Increased bone density is also expected in these children.

What has been done

A workshop was organized in fall 2007 and 34 parents and students attended.

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
702	Requirements and Function of Nutrients and Other Food Components
703	Nutrition Education and Behavior

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Other (Inavailability of parents on weekdays and difficulty for them to come on campus.)

Brief Explanation

A lot of parents did not come to the workshop. The reasons could be because it was planned on weekday and was located on campus. We will hold future workshops off-campus in the target population's community and we plan to hold workshops in churches before or after the Sunday service.

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- Comparisons between program participants (individuals,group,organizations) and non-participants

Evaluation Results

Parents of the children who participated in the feeding study did take into consideration the presence of probiotics in their choices of yogurts for their children (second most important factor) in the grocery store when compared to parents whom chidren did not participate in the study (4th most important factor). Still price was the most important factor influencing the selection of yogurt in the grocery store in both groups. Suggestion from the workshop attendees is that the education about the selection of yogurt containing probiotics be extended beyond the parents of preschool children to include all parents and adults.

Key Items of Evaluation

Program #3

V(A). Planned Program (Summary)

1. Name of the Planned Program

Food Animal Production and Management

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
302	Nutrient Utilization in Animals		100%		100%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.1	0.0	2.5
Actual	0.0	0.1	0.0	2.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	6963	0	228109
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	0	139720
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

For the Goat Project:

In 2007, crop by-products (CBP) such as Whole Cottonseed (WCS), Cottonseed Hulls (CSH), Broken Rice (brewers' rice) were fed to mixed cross-bred Boer goats who were also receiving concentrate rations formulated to supply 16 percent crude protein (CP) or commercial concentrate feed containing 16 percent CP. The trial concentrate grain mix contained Broken Rice (BR), Soybean meal (SBM), Chopped (cracked) Corn (CC), Salt, Vitamins premix, and minerals. The experimental design was a 3x3x3 randomized block design were all animals were fed under confined production management system in confined during the trial. Twenty seven goats (25 female and 2 wethers) were assigned to nine paddocks at the rate of three animals per paddock. The paddocks were 64 square feet in area (8 ft x 8 ft in dimension). Then the paddocks were randomly assigned to three treatments, A, B, and C with three replicates per treatment. The treatments were made up of the following: treatment A was feeding WCS and concentrate grain mix that also contained BR to provide 16 percent CP; treatment B was feeding WCH and concentrate grain mix that also contained BR to provide 16 percent CP; and treatment C was feeding low quality roughage (mixed grass hay) and commercial feed concentrate that provided 16 percent CP. Crop by-products and hay were made available to the animals at all times. Concentrate ration supplementations were fed in evening in order encourage the animals to consume more roughages in the morning and afternoon periods. All animals were animals were acclimated to the experimental rations for 7 days before data collection. All experimental animals received due diets throughout the trial period with exception of treatment A which started receiving some hay to stimulate the consumption of roughage from both WCS and hay. The trial spanned from May 24, 2007 to July 20, 2007. All animals received diets at the rate of 3 percent body weight (BW).

For the Swine Project:

Three feeding trials were completed in 2007. This involved the use of brewer's rice to replace corn as the main energy source for pig finishing rations. Brewer's rice is abundant in southeast Arkansas and is cheaper than corn or milo, two most commonly used energy feeds for this class of animals in this region. We are in the process of analyzing the data collected from the three trials completed in 2007. More testing of locally available feeds (mainly protein feeds) will continue in 2008.

2. Brief description of the target audience

The targeted audience will include high school students, college students, extension agents, livestock farmers, and stakeholders.

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	45	100	60	40
2007	90	300	120	80

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- There will be expected reduction in the cost of production (input) relative to the meat goats and pigs which will result to improv

Year	Target	Actual
2007	2	2

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	Number of papers,abstracts,reports and conference presentations
2	Checked

Outcome #1

1. Outcome Measures

Number of papers,abstracts,reports and conference presentations

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	4	2

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The cost of producing meat goats and swine is very prohibitive for limited resource farmers in SouthEast Arkansas. The least-cost feeds that were tested in 2007 for both meat goats and swine should offer alternative feed to commercial feed. This will ultimately reduce production cost for these animals and hence increase the farmer income.

What has been done

For the Goat Project:

In 2007, crop by-products (CBP) such as Whole Cottonseed (WCS), Cottonseed Hulls (CSH), Broken Rice (brewers' rice) were fed to mixed cross-bred Boer goats who were also receiving concentrate rations formulated to supply 16 percent crude protein (CP) or commercial concentrate feed containing 16 percent CP. The trial concentrate grain mix contained Broken Rice (BR), Soybean meal (SBM), Chopped (cracked) Corn (CC), Salt, Vitamins premix, and minerals. The experimental design was a 3x3x3 randomized block design were all animals were fed under confined production management system in confined during the trial. Twenty seven goats (25 female and 2 wethers) were assigned to nine paddocks at the rate of three animals per paddock. The paddocks were 64 square feet in area (8 ft x 8 ft in dimension). Then the paddocks were randomly assigned to three treatments, A, B, and C with three replicates per treatment. The treatments were made up of the following: treatment A was feeding WCS and concentrate grain mix that also contained BR to provide 16 percent CP; treatment B was feeding WCH and concentrate grain mix that also contained BR to provide 16 percent CP; and treatment C was feeding low quality roughage (mixed grass hay) and commercial feed concentrate that provided 16 percent CP. Crop by-products and hay were made available to the animals at all times. Concentrate ration supplementations were fed in evening in order encourage the animals to consume more roughages in the morning and afternoon periods. All animals were animals were acclimated to the experimental rations for 7 days before data collection. All experimental animals received due diets throughout the trial period with exception of treatment A which started receiving some hay to stimulate the consumption of roughage from both WCS and hay. The trial spanned from May 24, 2007 to July 20, 2007. All animals received diets at the rate of 3 percent body weight (BW).

For the Swine Project:

Three feeding trials were completed in 2007. This involved the use of brewer's rice to replace corn as the main energy source for pig finishing rations. Brewer's rice is abundant in southeast Arkansas and is cheaper than corn or milo, two most commonly used energy feeds for this class of animals in this region. We are in the process of analyzing the data collected from the three trials completed in 2007. More testing of locally available feeds (mainly protein feeds) will continue in 2008.

Results

For the Goat Project:
Feeding of cottonseed hulls and protein concentrate mix that also contains broken rice, can provide protein, fiber and energy for maintenance and weight gain for goats. Goats that are fed either whole cottonseed with some hay supplementation would gain weight higher than goats the are fed cottonseed hulls with protein concentrate mix that also contains broken rice. A balanced mixture of soybean meal, broken rice, chopped corn, vitamins and minerals is relatively, as good as commercial grain mix of equivalent protein levels in helping goats gain weight. The use of whole cottonseed or cottonseed hulls with protein and rice concentrate mix would provide cheap sources of nutrients and reduce production cost of goats.

For the Swine Project:

Techniques that can be used to prepare and mix hog feeds applicable at farm level were demonstrated during a field day held at the university farm in July 2007 and also at various times to individual farmers and students who visited with our project. Forty students were trained and two hog farmers adopted some of the techniques that were disseminated.

4. Associated Knowledge Areas

KA Code	Knowledge Area
302	Nutrient Utilization in Animals

Outcome #2

1. Outcome Measures
Checked

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Checked

What has been done

Checked

Results

Checked

4. Associated Knowledge Areas

KA Code	Knowledge Area
302	Nutrient Utilization in Animals

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Populations changes (immigration,new cultural groupings,etc.)
- Other (Inadequate research facilities to conduct confined livestock production systems trials.)

Brief Explanation

Inadequate animal research facilities constrained the scope of our research. This factor is greatly influenced by most of the external factors indicated above.

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)

Evaluation Results

Key Items of Evaluation

Program #4

V(A). Planned Program (Summary)

1. Name of the Planned Program

Families, Youth, and Communities

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
802	Human Development and Family Well-Being		0%		100%
	Total		0%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.0	0.0	1.3
Actual	0.0	0.0	0.0	0.4

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	0	48987
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Once data is collected from licensed early childhood program directors on their perception of quality, an on site two-hour observation using the environmental rating scales will be conducted at each center responding to the survey and agreeing to participate further in the study. It is expected that at least 50% of the childcare facilities will participate in the full study. The rating scales are used to measure quality in childcare centers and are based on a one-to seven-point scale, on a continuum of one for poor quality and seven for excellent quality. The reported rating scores given by the teachers, directors, and parents will be compared to the environmental rating scale score to determine consistency between perceptions reported on the survey and actual scores obtained during the observation. Informational meetings concerning accreditation and the Arkansas Quality Approval System process will be introduced to center directors during the observational visit.

2. Brief description of the target audience

Our target audience will be day care home operators, day care center directors, centers' employees, children in day care centers, teachers, and parents in Jefferson County and Southeast Arkansas' early childcare centers, head start centers, and family daycare homes.

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	134	135	500	500
2007	13	20	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	1
2007 :	0

Patents listed

None

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	0	1

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Day care home operators, day care center directors, centers' employees, children in day care centers, teachers, and parents c

Year	Target	Actual
2007	500	0

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	Directors, teachers, and parents in early childhood programs, head start centers, and family daycare homes in Jefferson County and Southeast Arkansas will be assessed for center quality and will serve as our outcome targets.

Outcome #1

1. Outcome Measures

Directors, teachers, and parents in early childhood programs, head start centers, and family daycare homes in Jefferson County and Southeast Arkansas will be assessed for center quality and will serve as our outcome targets.

2. Associated Institution Types

•1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	376	23

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Currently, there are no centers or family day care homes in Jefferson County that are accredited by the National Association for the Education of Young Children (NAEYC) and only four were found in Southeast Arkansas. No published research has been found that assesses predictors of quality programs in Arkansas, Jefferson County or Southeast Arkansas. Therefore, this research project will assess the quality practices in childcare centers and family day care homes in Jefferson County and Southeast Arkansas and increase the awareness of what research suggests that quality programs look like.

What has been done

On July 13, 2007, prospective pilot participants were invited to attend a luncheon and workshop to learn more about the pilot study,"The Early Childhood Workforce in Southeast Arkansas: Predictors of Quality in Early Childhood Programs." During this meeting, four (4) directors from infant and toddler, seven (7) preschool childhood, and two (2) family day care homes directors completed a pilot survey. Also, during the Summer and Fall Semesters 2007, three (3) codebooks were developed and designed for the three (3) pilot survey instruments: A Survey Evaluating Quality in Early Childhood Programs (Infant and Toddler); A Survey Evaluating Quality in Early Childhood Programs (Preschool); and A Survey Evaluating Quality in Family Home Programs. The completed pilot surveys received were then coded with a code number for data entry.

Results

Data from the pilot study were entered and analyzed during the Fall 2007 semester, using SPSS 12.0 software program. The following are a few of the concerns which were mentioned by the pilot participants: (1) The length of time required for evaluation; (2) Areas evaluator would look at; and (3) Prior notice was necessary in order to have anyone come into a family home daycare center to evaluate.

4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Programatic Challenges
- Populations changes (immigration,new cultural groupings,etc.)

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

1. **Evaluation Studies Planned**
   - Before-After (before and after program)
   - Comparisons between program participants (individuals,group,organizations) and non-participants

Evaluation Results

Key Items of Evaluation

Program #5

V(A). Planned Program (Summary)

1. Name of the Planned Program

Improved Management Options to Improve Catfish Production Efficiencies and Lower Costs

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
302	Nutrient Utilization in Animals		20%		20%
307	Animal Management Systems		20%		20%
308	Improved Animal Products (Before Harvest)		20%		20%
601	Economics of Agricultural Production and Farm Management		15%		15%
602	Business Management, Finance, and Taxation		15%		15%
603	Market Economics		10%		10%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.8	0.0	0.7
Actual	0.0	0.8	0.0	1.5

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	95378	0	261034
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	49277	0	237370
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

ull;Conduct field trials •Conduct method demonstrations •Publish results •Give presentations •Develop individual enterprise budgets for catfish producers •Develop news articles on improving farm efficiency •Develop producer workshop targeting efficiency improvements for producers •Work with catfish industry to develop copper sulfate use protocol •Work with fish processing plants in valuing use of copper sulfate for off flavor control. •Work with industry supplies who manufacture copper sulfate on proper use of the product

Initially, a suite of alternative diet ingredients will be screened in pilot studies for potential efficacy in full studies.

1. Candidates for alternative protein sources are cuphea meal, soybean concentrates, poultry meals, and invertebrate meal.
2. Candidates for lipid sources are non-fish sources of n-3 fatty acids such as canola, flaxseed oil, and algal concentrates.
3. Prebiotics and probiotics may include GrobioticTM, DailyTM, and Bacillus spores.

2. Brief description of the target audience

- •Catfish farmers throughout Arkansas
- •County Extension agents
- •Grocery store managers
- •Consumers
- Commercial catfish producers
- Interested potential producers
- Commercial Bankers
- Copper sulfate manufacturers and suppliers

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	**Target**	**Target**	**Target**	**Target**
Plan	12	100	0	0
2007	2337	9000	52	5

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	4	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Refereed Journal Articles

Year	Target	Actual
2007	4	15

Output #2

Output Measure

- Number of Abstracts Published

Year	Target	Actual
2007	8	24

Output #3

Output Measure

- Number of Presentations at Scientific Meetings

Year	Target	Actual
2007	7	22

Output #4

Output Measure

- Number of Trade Magazine Articles

Year	Target	Actual
2007	3	6

Output #5

Output Measure

- Number of Catfish Farms Adopting Recommendations

Year	Target	Actual
2007	90	65

Output #6

Output Measure

- Number of Catfish Acres Using Recommendations

Year	Target	Actual
2007	16000	25500

Output #7

Output Measure

- Number of Ponds in Copper Sulfate Demonstrations

Year	Target	Actual
2007	5	1

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	Number of commercial pond owners informed of the options to improve water circulation through aerator placement
2	Number of farm managers considering increased pond circulation in the placement of new aerators
3	Number of producers responding to project results
4	Number of producers willing to test successful ingredients or feeding strategies on a commercial scale
5	Percent of CFAR members aware of effect aerator placement has on circulation
6	Number of Farmers Gaining Access to Catfish Market Information
7	Number of Stores Adopting Recommendations
8	Number of Stores Increasing Sales of Catfish
9	Number of Arkansans Gaining Access to Catfish Management Information
10	Number of Arkansans Adopting Management Recommendations
11	Number of Arkansans Increasing Efficiency, Profitability Through Improved Catfish Management
12	Number of diets with new ingredients that are commercially available, or number of new feeding strategies implemented by industry

Outcome #1

1. Outcome Measures

Number of commercial pond owners informed of the options to improve water circulation through aerator placement

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	1	4

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Farm managers have asked about aerator placement

What has been done

Farm managers have been encouraged to position the aerator for maximum circulation. Improved pond circulation can lead to better water quality, which in turn leads to improved fish health and growth.

Results

No producers have moved aerators due to cost or other considerations.

4. Associated Knowledge Areas

KA Code	Knowledge Area
308	Improved Animal Products (Before Harvest)

Outcome #2

1. Outcome Measures

Number of farm managers considering increased pond circulation in the placement of new aerators

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	1	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Farm managers asked about aerator placement.

What has been done

Farm managers were encouraged to position the aerator for maximum circulation. Improved pond circulation can lead to better water quality, which in turn leads to improved fish health and growth.

Results

At present, no producers have moved aerators due to cost and other considerations

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #3

1. Outcome Measures

Number of producers responding to project results

2. Associated Institution Types

•1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	75	5

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Farm managers inquired about aerator placement.

What has been done

Farm managers were encouraged to position the aerator for maximum circulation. Improved pond circulation can lead to better water quality, which in turn leads to improved fish health and growth.

Results

No producers have moved aerators due to cost or other considerations.

4. Associated Knowledge Areas

KA Code	Knowledge Area
302	Nutrient Utilization in Animals

Outcome #4

1. Outcome Measures

Number of producers willing to test successful ingredients or feeding strategies on a commercial scale

2. Associated Institution Types

•1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	3	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Commercial production of channel catfish is relatively inefficient. Feed accounts for up to 50% of production costs. Producers are interested in novel diet ingredients and feeding strategies that can improve the profitability of their industries. Human consumers are interested in products that taste good and are beneficial for health

What has been done

A suite of alternative diet ingredients will be screened in pilot studies for potential efficacy in full studies

Results

Candidates for alternative protein sources are cuphea meal, soybean concentrates, poultry meals, and invertebrate meal. Candidates for lipid sources are non-fish sources of n-3 fatty acids such as canola, flaxseed oil, and algal concentrates. Prebiotics and probiotics may include Grobiotic, Daily, and Bacillus spores.

4. Associated Knowledge Areas

KA Code	Knowledge Area
302	Nutrient Utilization in Animals

Outcome #5

1. Outcome Measures

Percent of CFAR members aware of effect aerator placement has on circulation

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	20	20

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Farm managers inquired about aerator placement.

What has been done

Farm managers were encouraged to position the aerator for maximum circulation. Improved pond circulation can lead to better water quality, which in turn leads to improved fish health and growth.

Results

No producers have moved aerators due to cost or other considerations.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #6

1. Outcome Measures

Number of Farmers Gaining Access to Catfish Market Information

2. Associated Institution Types

•1890 Research

3a. Outcome Type:
Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	5	161

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The U.S. catfish industry is facing increased market competition from low-priced imports from Vietnam and China. Greater understanding of current trends in U.S. markets, including information related to managing the entire supply chain for catfish provides guidance on means to position U.S. catfish products in a way to compete on attributes other than just the price.

What has been done

A series of meetings and workshops have been held to bring together experts and buyers from across the U.S. farm-raised catfish supply chain to meet with catfish producers and processors.

Results

The series of meetings has resulted in a recognition by catfish farmers in Arkansas that a new approach to managing the entire supply chain and working to develop partnerships across the supply chain is essential. Committees appointed by the Catfish Farmers of Arkansas are following up on the preliminary discussions and more specific plans are being developed.

4. Associated Knowledge Areas

KA Code	Knowledge Area
603	Market Economics

Outcome #7

1. Outcome Measures
Number of Stores Adopting Recommendations

2. Associated Institution Types

•1890 Research

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	1	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
603	Market Economics

Outcome #8

1. Outcome Measures

Number of Stores Increasing Sales of Catfish

2. Associated Institution Types

•1890 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
603	Market Economics

Outcome #9

1. Outcome Measures

Number of Arkansans Gaining Access to Catfish Management Information

2. Associated Institution Types

•1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	45	125

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Increasing feed prices and declining catfish prices in 2007 have created financial difficulties for many catfish farmers

What has been done

Pond studies and economic models developed continue to be used to refine recommendations for optimal stocking and feeding of catfish. Mathematical programming models have been developed to identify profit-maximizing combinations of on-farm production of catfish fingerlings, stockers, and food fish. Winter feeding studies have been conducted to compare effects of feeding and not feeding over the winter period.

Results

Profits are maximized by under-stocking 12.7-cm fingerlings. A 3-phase production system can be more profitable but entails higher risk of financial losses on catfish farms. Winter feeding studies have shown that current recommendations for feeding catfish over the winter are inadequate; catfish lose weight even when fed based on the current recommendations.

4. Associated Knowledge Areas

KA Code	Knowledge Area
602	Business Management, Finance, and Taxation

Outcome #10

1. Outcome Measures

Number of Arkansans Adopting Management Recommendations

2. Associated Institution Types

•1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	5	38

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Increasing feed prices and declining catfish prices in 2007 ahve created financial difficulties for many catfish farmers

What has been done

Pond studies and economic models developed continue to be used to refine recommendations for optimal stocking and feeding of catfish. Mathematical programming models have been developed to identify profit-maximizing combinations of on-farm production of catfish fingerlings, stockers, and food fish. Winter feeding studies have been conducted to compare effects of feeding and not feeding over the winter period.

Results

Profits are maximized by under-stocking 12.7-cm fingerlings. A 3-phase production system can be more profitable but entails higher risk of financial losses on catfish farms. Winter feeding studies have shown that current recommendations for feeding catfish over the winter are inadequate; catfish lose weight even when fed based on the current recommendations.

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management

Outcome #11

1. Outcome Measures

Number of Arkansans Increasing Efficiency, Profitability Through Improved Catfish Management

2. Associated Institution Types

•1890 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	4	13

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Increasing feed prices and declining catfish prices in 2007 have created financial difficulties for many catfish farmers.

What has been done

Budgets for U.S. farm-raised catfish production have been updated, distributed to all farmers, posted on the web site, and distributed on CDs. Additional tables have been generated of the effects on production costs of varying feed prices. Instructions on how to interpret breakeven prices above variable costs, total costs, and net returns above cash costs have been distributed widely. Spreadsheets that calculate the effect of allocating feed quantities to meet cash flow needs have also been distributed.

Results

Workshops have been well attended. Over 200 copies of CDs, budget publications, and updated tables have been requested. Farmers are adopting the spreadsheets to their particular farm situation and making decisions for 2008 based on analysis of their cost structures.

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management

Outcome #12

1. Outcome Measures

Number of diets with new ingredients that are commercially available, or
number of new feeding strategies implemented by industry

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	1	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Commercial production of channel catfish is relatively inefficient. Feed accounts for up to 50% of production costs. Producers are interested in novel diet ingredients and feeding strategies that can improve the profitability of their industries. Human consumers are interested in products that taste good and are beneficial for health.

What has been done

A suite of alternative diet ingredients will be screened in pilot studies for potential efficacy in full studies.

Results

Cuphea meal is an effecive alternative to wheat bran in catfish diets. Flaxseed is a promising alternative to marine fish oils to enhance n-3 fatty acid composition, some aspects of health, and growth of channel catfish. So far, the prebiotics tested (Grobiotic, Daily, and Bacillus spores) have not improved any measured performance variables in channel catfish, but effect on specific immune response has not been tested sufficiently.

4. Associated Knowledge Areas

KA Code	Knowledge Area
302	Nutrient Utilization in Animals

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Other (Changing market demand for aquacultured products, new disease or other production barrier, and public acceptance of recommendations. Global economic situation changes, regulatory laws change. Changes in EPA regulations. Costs and feasibility of moving aer)

Brief Explanation

Factors affecting overall profitability of fish culture that may have nothing to do with diet or feeding strategies:
1. fuel costs
2. weather
3. competition from domestic and imported products
4. unfavorable publicity

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- During (during program)

Evaluation Results

Key Items of Evaluation

Program #6

V(A). Planned Program (Summary)

1. Name of the Planned Program

Alternative Crop Production

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plar		20%		20%
205	Plant Management Systems		40%		40%
211	Insects, Mites, and Other Arthropods Affecting Plants		20%		20%
601	Economics of Agricultural Production and Farm Management		20%		20%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.1	0.0	4.2
Actual	0.0	0.1	0.0	2.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	11659	0	267649
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	0	209580
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Conducted Research Experiments. Made five presentations in national conferences and meetings. Conducted one field day (more than 200 participants including local farmers and community leader). Published one extension article. Published three research publications in peer reviewed journals.

The brief results of the research are given below:

A study was initiated to identify vegetable rotations for high yields and profit for the small farmers. The treatments were: (1) continuous sweet potato – fall greens sequence (SWP followed by SWP); (2) continuous squash – fall greens sequence (SQ followed by SQ); (3) continuous southern peas - fall greens sequence (SP followed by SP); (4) continuous sweet corn-southern peas-fall greens (SWC followed by SWC); (5) SWP rotated with SP; (6) SQ rotated with SP. Yields of two varieties for sweet potato, southern peas, sweet corn, and fall greens, and of one variety for squash were recorded. Total and US1 sweet potato yields increased in continuous SWP sequences for both varieties at UAPB. Sweet corn yields in continuous SWC sequences increased for both varieties. Cumulative squash yields after harvest time #7 and total squash production were higher in 2007 than in 2006 in continuous SQ sequences. There was a trend for lower fresh and dry peas yields in SWC and SP sequences, and higher fresh and dry peas yields in SWP and SQ sequences. Also, fresh weights of fall greens (broadleaf mustard and turnip) tended to be higher in a SQ sequence than in crop sequences that included sweet potato and southern peas. Yields of vegetable crops grown on small farms were affected by the previous crop sequence in the rotation or no rotation systems. Our preliminary data indicate that there may be a yield advantage for sweet potato, sweet corn, and squash grown in continuous sequences of those crops with fall greens. However, growing southern peas in sweet corn and southern peas sequences without rotation may result in lower yields for southern peas than when southern peas are grown in rotation with sweet potato and squash sequences. Economical analysis for the first two years will be conducted soon. In another study, Boston cucumber and Carolina hybrid cucumber were planted and raised to have 4 leaves. Orange oil was applied to both cucumber varieties. Ttwo different ratios of orange oil in water, one is 1 : 1000 and the other 1 : 500 were used. Orange oil was sprayed once a week for three weeks. A control plot with no orange oil sprayed was included. After treatments, the number of whitefly was counted in treated and control plots once a week for a month. The spray (1:1000) of orange oil extremely well controlled population of whitefly in Boston variety, compared to Carolina variety. The number of whiteflies observed from 28 whiteflies per a control plant to less than 4 whiteflies per a treated plant in average. However, in Carolina variety, 12 whiteflies per a control plant to less than 4 whiteflies per treated plant in average. The results of spray (1:500) of orange oil showed similar to 1:1000 ratio, but the higher concentration of the orange oil caused deformation of leaves on both Boston and Carolina varieties. Boston cucumber was adopted better than Carolina cucumber in Arkansas, but Boston one was more susceptible to greenhouse whitefly than Carolina one. A third study to characterize some flowering and ornamental crops for suitability in the lower Mississippi Delta region is on-going.

2. Brief description of the target audience

Small Farms and Limited Resources Farmers. Limited resources farmers grow vegetables, small fruits, and ornamentals as alternatives to growing row crops. High potential returns per acre can be obtained with minimum investment provided best mangement practices such as crop rotations and insect control are used.

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	50	75	20	50
2007	50	75	20	50

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

No

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

Plan	Extension	Research	Total
2007	1	3	4

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Fifty percent of the UAPB LRF's clientele adapt the rotation and insect control practices after five years. In case of ornamental

Year	Target	Actual
2007	25	10

Output #2

Output Measure

- 10

Year	Target	Actual
2007	{No Data Entered}	10

Output #3

Output Measure

- Conduct Research Experiments, Make five presentations in national conferences and meetings, Conduct one field day (more

Year	Target	Actual
2007	{No Data Entered}	10

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	1)The number of LRFs that adopt vegetable rotations/planting sequences, and insect control practices developed by this research; 2) number of LRFs that enter ornamental horticultural production, and 3) number of contact with clientele at workshop, field days, demonstrations, etc.

Outcome #1

1. Outcome Measures

1)The number of LRFs that adopt vegetable rotations/planting sequences, and insect control practices developed by this research; 2) number of LRFs that enter ornamental horticultural production, and 3) number of contact with clientele at workshop, field days, demonstrations, etc.

2. Associated Institution Types

•1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	10	1

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The limited resources farmers. To get maximum benefit and profit following proper rotation and selecting high yielding cultivars for growing alternative crops.

What has been done

Field and greenhouse experiments, field day, one extension publication and three research publications.

Study was initiated to identify vegetable rotations for high yields and profit. The treatments were: Continuous sweet potato - fall greens sequence (SWP followed by SWP); Continuous squash - fall greens sequence (SQ followed by SQ); Continuous southern peas - fall greens sequence (SP followed by SP); Continuous sweet corn-southern peas-fall greens (SWC followed by SWC); SWP rotated with SP; SQ rotated with SP. Boston and Carolina hybrid cucumber were planted to have 4 leaves. Orange oil was applied using two ratios namely 1:1000 and 1:500. A control plot included in which no orange oil sprayed.

Results

Sweet potato yields increased in continuous SWP sequences for both varieties at UAPB. Sweet corn yields in continuous SWC sequences increased for both varieties. Cumulative squash yields after harvest time #7 and total squash production were higher in 2007 than in 2006 in continuous SQ sequences. There was a trend for lower fresh and dry peas yields in SWC and SP sequences, and higher fresh and dry peas yields in SWP and SQ sequences. Boston and Carolina hybrid cucumber were planted and orange oil was applied to both cucumber varieties. The spray (1:1000) of orange oil extremely well controlled population of whitefly in Boston variety, compared to Carolina variety. The results of spray (1:500) of orange oil showed similar to 1:1000, but the higher concentration of the orange oil caused deformation of leaves on both Boston and Carolina varieties. Boston cucumber was adopted better than Carolina cucumber in Arkansas, but Boston one was more susceptible to greenhouse whitefly than Carolina one.

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management
205	Plant Management Systems
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants
211	Insects, Mites, and Other Arthropods Affecting Plants

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

1. **Evaluation Studies Planned**
   - After Only (post program)
   - During (during program)

Evaluation Results

Field evaluations were conducted using sweetpotatoes, southern peas, and squash. The agronomic and yield contributing characteristics were observed. Another field experiment evaluated the effect of two concentrations of orange oil as a pest management treatment, namely for whitefly, in two cucumber varieties. The results of these studies are summarized below:

A study was initiated to identify vegetable rotations for high yields and profit for the small farmers. The treatments were: (1) Continuous sweet potato – fall greens sequence (SWP followed by SWP); (2) Continuous squash – fall greens sequence (SQ followed by SQ); (3) Continuous southern peas - fall greens sequence (SP followed by SP); (4) Continuous sweet corn-southern peas-fall greens (SWC followed by SWC); (5) SWP rotated with SP; (6) SQ rotated with SP. Yields of two varieties for sweet potato, southern peas, sweet corn, and fall greens, and of one variety for squash were recorded. Total and US1 sweet potato yields increased in continuous SWP sequences for both varieties at UAPB. Sweet corn yields in continuous SWC sequences increased for both varieties. Cumulative squash yields after harvest time #7 and total squash production were higher in 2007 than in 2006 in continuous SQ sequences. There was a trend for lower fresh and dry peas yields in SWC and SP sequences, and higher fresh and dry peas yields in SWP and SQ sequences. Also, fresh weights of fall greens (broadleaf mustard and turnip) tended to be higher in a SQ sequence than in crop sequences that included sweet potato and southern peas. Yields of vegetable crops grown on small farms were affected by the previous crop sequence in the rotation or no rotation systems. Our preliminary data indicate that there may be a yield advantage for sweet potato, sweet corn, and squash grown in continuous sequences of those crops with fall greens. However, growing southern peas in sweet corn and southern peas sequences without rotation may result in lower yields for southern peas than when southern peas are grown in rotation with sweet potato and squash sequences. Economical analysis for the first two years will be conducted soon.

Seeds of Boston cucumber and Carolina hybrid cucumber were planted and raised them to have 4 leaves. Orange oil was applied to both cucumber varieties. Two different ratios were used (orange oil in water): 1:1000 and 1:500. Orange oil sprayed once a week for three weeks. A control plot included in which no orange oil sprayed. After treatments, the number of whitefly was counted in treated and control plots once a week for a month. The spray (1:1000) of orange oil extremely well controlled population of whitefly in Boston variety, compared to Carolina variety. The number of whiteflies observed from 28 whiteflies per a control plant to less than 4 whiteflies per a treated plant in average. However, in Carolina variety, 12 whiteflies per a control plant to less than 4 whiteflies per treated plant in average. The results of spray (1:500) of orange oil showed similar to 1:1000 ratio, but the higher concentration of the orange oil caused deformation of leaves on both Boston and Carolina varieties. Boston cucumber was adopted better than Carolina cucumber in Arkansas, but Boston one was more susceptible to greenhouse whitefly than Carolina one. further experiments will be conducted to develop a crop protection system against economically beneficial pests using the natural resources. Several natural resources will be considered and determined to improve the efficiency of pest management. The suitable natural resources will be modified as necessary for field use. Field and greenhouse evaluations of flowering bulbs are on-going.

Key Items of Evaluation

Program #7

V(A). Planned Program (Summary)

1. Name of the Planned Program

Herbs, Spices, and Medicinal Crops

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
202	Plant Genetic Resources		50%		50%
502	New and Improved Food Products		10%		10%
701	Nutrient Composition of Food		30%		30%
712	Protect Food from Contamination by Pathogenic Microorgani		10%		10%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.1	0.0	2.1
Actual	0.0	0.1	0.0	1.6

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	3840	0	152276
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	0	69860
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Planning was done by personal conract or by phone with the stakeholders and collaborating agencies. Field experiments were conducted on 66 promising varieties/lines of hot peppers and 45 lines were selected for further studies. About 40 ornamental pepper varieties have been selected for further observation in variety selection and demonstration trials. Tissue culture of the pure lines of bitter melons could not be done due to lack of manpower and facilities. Phytochemical screening of hot pepper lines and another specialty vegetable may begin in collaboration with Tuskegee University next fall. Laboratory experiments will be conducted for protection of processed foods against microbial contaminations. The experiement could not be started yet. Taste testing and food intake studies will be conducted followed by demonstration trials in a year or two.

2. Brief description of the target audience

Our targeted audiences will be leaders in the agricultural, academic and local communities including small farmers and home gardeners. Food scientists, health activists, and nutritionists will also be addressed. One group meeting with small farmers and gardeners was conducted.

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	15	45	0	0
2007	10	20	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	1	1

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- # of research publications; # of promising crop lines identified; # of successful food preparations

Year	Target	Actual
2007	1	1

Output #2

Output Measure

- 2012 2 publications + 3 crop lines + 2 food preparation items

Year	Target	Actual
2007	{No Data Entered}	1

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	# of people have knowledge about the new/improved recipes
2	# of people accept/like the new food preparations
3	# of people adopted the new foods in their daily diets
4	# of people interested in growing new crop lines

Outcome #1

1. Outcome Measures

# of people have knowledge about the new/improved recipes

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Gardeners and consumers

What has been done

Information dissemination through Field Day and group contact

Results

People have become interested to know more about specialty vegetables.

4. Associated Knowledge Areas

KA Code	Knowledge Area
202	Plant Genetic Resources

Outcome #2

1. Outcome Measures

# of people accept/like the new food preparations

2. Associated Institution Types

- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
202	Plant Genetic Resources

Outcome #3

1. Outcome Measures

# of people adopted the new foods in their daily diets

2. Associated Institution Types

•1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	20

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Small farmers, gardeners and consumers will have knowledge about the new improved crop lines/varieties that will have better nutritional, health and economic benefits.

What has been done

Field experiments were conducted, a research publication on eggplant varieties was submitted, and a Field Day and group meeting were conducted.

Results

In the preliminary tests, 66 hot pepper lines were evaluated and 40 selected; 50 ornamental pepper lines were evaluated and 45 selected for further test. Nutritional and phytochemical analyses are being planned in collaboration with the Tuskegee University Department of Food and Nutritional Sciences.

4. Associated Knowledge Areas

KA Code	Knowledge Area
701	Nutrient Composition of Food
502	New and Improved Food Products
202	Plant Genetic Resources

Outcome #4

1. Outcome Measures

# of people interested in growing new crop lines

2. Associated Institution Types

•1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	5

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Some community members want to grow new hot pepper varieties. Some others are interested in looking at the potential ornamenatal types for their home gardens, patios, etc.

What has been done

People were invited for field visit. Information was also disseminated by word of mouth.

Results

Several people are waiting to see the demonstration plots for the new varieties.

4. Associated Knowledge Areas

KA Code	Knowledge Area
202	Plant Genetic Resources

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Government Regulations
- Competing Programatic Challenges

Brief Explanation

Initially the POW was too broad ambitious. Availability of manpower, fund and other resources available were over estimated. Also, the outcome measures were not all appropriately stated in the POW and thus need modifications.

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- Before-After (before and after program)
- During (during program)

Evaluation Results

Evaluation was done based on number of varieties selected.

Key Items of Evaluation

Genotypes and plan for chemical analysis.

Program #8

V(A). Planned Program (Summary)

1. Name of the Planned Program

Small Farm Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plar		25%		0%
213	Weeds Affecting Plants		20%		0%
301	Reproductive Performance of Animals		15%		0%
601	Economics of Agricultural Production and Farm Management		40%		0%
	Total		100%		0%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	4.0	0.0	0.0
Actual	0.0	4.5	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	54797	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	382990	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The following activities will be conducted: educational meetings, alternative enterprise tours, newsletters, news articles, fact sheets, one-on-one assistance, assistance with loan applications, assistance in developing production plans, assistance in developing marketing plans, assistance in using USDA Program, and assistance in using CES recommendations, crop insurance, estate planning, and credit consulting.

2. Brief description of the target audience

The targeted audience for the Small Farm Program include African Americans, Hispanics, Women, and farms with gross farm sales less than $250,000.

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	6300	10000	250	300
2007	6500	10200	275	325

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Output is measured by the following numbers: contacts, educational meetings conducted, tours sponsored, news articles publi

Year	Target	Actual
2007	600	650

Output #2

Output Measure

- Output will be measured in the following ways: the number of clients using the Small Farm Program services, the number of cl

Year	Target	Actual
2007	500	550

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	Outcomes will be measured by number of farmers participating in the program, number of farmers assistaned with loan applications, amount of loan funds received as a result of assistance with application, number of farmers assisted in signing up for Conservation Programs, amount of conservation funds received by clients, number of farmers assisted in signing up for Price Support (Disaster, NAP, LAP, LDP, DCP) programs, amount of income clients received by using programs, number of farmers assisted in using CES recommendations, economic impact from farmers using CES Programs, and number of farmers informed about alternative enterprises, and number of farers adding alternative enterprises to their operation.

Outcome #1

1. Outcome Measures

Outcomes will be measured by number of farmers participating in the program, number of farmers assistaned with loan applications, amount of loan funds received as a result of assistance with application, number of farmers assisted in signing up for Conservation Programs, amount of conservation funds received by clients, number of farmers assisted in signing up for Price Support (Disaster, NAP, LAP, LDP, DCP) programs, amount of income clients received by using programs, number of farmers assisted in using CES recommendations, economic impact from farmers using CES Programs, and number of farmers informed about alternative enterprises, and number of farers adding alternative enterprises to their operation.

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	500	500

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Many socially disadvantaged farmers (SDFs) fail to use USDA Programs due to various reasons such as: past problems with USDA, unfamiliar with USDA programs, or reluctant to visit local office. This has caused SDFs to lose millions of dollars that could have been used in their operations and as a result of this, many SDFs have lost their farms. Also most SDFs also do not use the Cooperative Extension Service (CES). They get their crop and livestock production information from other farmers or the local farm supply store. As a result, most SDFs do not use CES recommendations and this may be contributing to lower yields on their farms. If, SDFs are to maintain their farms they must use both USDA Programs and CES production information.

What has been done

To help SDFs use USDA Programs, and the CES, proposals were written to obtain funds to employ extension associates to help SDFs use USDA Programs and the CES as well as to assist SDFs using the holistic approach (their entire operation, marketing, production, economic) with their operation. Also partnerships were established with several USDA and state agencies to help in delivering their services to SDFs.

Results

Six extension associates were placed in six areas of the state which had a high concentration of SDFs. These extension associates worked directly with approximately 130 SDFs to provide them with knowledge on USDA loans. As a result 57 SDFs submitted applications and received $6,028,696 in operating loan funds. Another 10 SDFs submitted their application and were denied for having an unacceptable credit history, however, the staff worked with these participants to help them start rebuilding their credit history.

The extension associates also informed 25 SDFs about the EQIP Program. As a result, 12 individuals signed up for the program and received $252,618 for land improvement practices (irrigation wells and land leveling). Two SDFs signed up for the Conservation Reserve Program and received 10 year rental payments and cost share funds (90%) and a $100 per acre signing bonus to install filter strips on approximately 7 acres of land.

The extension associates also advised approximately 100 SDFs to start using the CES crop production recommendations. As a result approximately 50 SDFs began using CES recommended soybean varieties. This resulted in a 20 percent yield increase for the producers. Also 35 SDFs are currently using the CES weed Control Manuals to select herbicides to use in controlling weeds on their farms.

4. Associated Knowledge Areas

KA Code	Knowledge Area
213	Weeds Affecting Plants
601	Economics of Agricultural Production and Farm Management
301	Reproductive Performance of Animals
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Other (Grant programs not funded)

Brief Explanation

Naturals disasters like droughts, flooding, etc can affect the crops produced by farmers and result in their income being severely depressed in those years. Also, the extension associates that provide extra support for this program operate on grant funds, if the project they operate on is not funded the amount of assistance provided in the different areas will be reduced.

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- During (during program)
- Comparisons between program participants (individuals,group,organizations) and non-participants

Evaluation Results

Participants in the program know more about USDA Programs, they are more likely to call UAPB or a USDA Agency when they need information than individuals not in the program. Also producers in the program know more about alternative enterprises and are more likely to diversify than those participants not enrolled in the program. Those participants in the program are more likely to apply for loans, conservation funds, etc. and use they are more likely to use production recommendations of the Cooperative Extension Service.

Key Items of Evaluation

Personal visits with nonparticipants who did not know about the different USDA Program and failed to use the Cooperative Extension Service for production information.

Program #9

V(A). Planned Program (Summary)

1. Name of the Planned Program

Extension Livestock Management Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
301	Reproductive Performance of Animals		10%		0%
303	Genetic Improvement of Animals		10%		0%
306	Environmental Stress in Animals		15%		0%
307	Animal Management Systems		25%		0%
806	Youth Development		40%		0%
	Total		100%		0%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	1.0	0.0	0.0
Actual	0.0	1.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	138733	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	50769	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Primary activities with producers will be individual farm visits, educational meetings, field days, farm demonstrations, office conferences, and the preparation and/or distribution of educational materials. Primary youth activities are the Southeast District Fair, swine shows at the State Fair, the Southeast District 4-H Horse Show, and the Arkanas 4-H Veterinary Science Project activities.

2. Brief description of the target audience

Livestock producers. 4-H and FFA youth.

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	150	25	1000	0
2007	309	25	1831	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Output measures will be number of producers working with the program (175 annual contacts), increase in number of animals

Year	Target	Actual
2007	1175	2140

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	Number of producers involved in the livestock program.

Outcome #1

1. Outcome Measures

Number of producers involved in the livestock program.

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	10	9

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The primary problems are low percent calf crops weaned - research indicates average percent calf crops of 70-75% instead of 90%, and light calf weaning weights - often around 300 or 400 lbs instead of 500 to 600 lbs. Having fewer calves for sale and fewer pounds of calf for sale means less farm income. This lowered income for livestock means the producer's income is less thann it's potential. Also if the producer is operating on a FSA loan or a loan from another organization, it means he/she will have problems in repaying the loan. This will also impact the loan agency as a defaulted or problem loan.

What has been done

Work has been conducted with three farms for several years involving basic herd records and with two of these farms on herd performance records. Basic herd records involves ear tagging and tattooing all the animals and then as calves are born, identifing them, recording birth dates, sex of calf, etc. At weaning the records are summarized and different herd production measures such as percent cows bred, percent cows calving, percent calf crop weaned, etc. are developed. Performance records involve weighing calves at weaning and as yearlings and determining weaning weights and yearling weights.
Work in southwest Arkansas has essentially just started with a group six to seven minority cattlemen. Farm and office visits have been conducted. Discussions have centered around general herd management practices with an emphasis on basic herd records. Also during these visits we have listened to them and determined some of their problems and concerns.

Results

With the three herds that are keeping basic records, they are reporting percent calf crops weaned in the range of 85 to 90%. One of the herds on performance test reported a herd average weaning weight of 662 lbs on their fall born calves and 563 lbs on thier spring born calves. The other herd on test reported a herd average weaning weight of 569 lbs on fall born calves. This particular herd had an average weaning weight of 230 lbs when they first started performance testing. All three of these herds are selling bulls to other cattlemen for breeding and are considered to be top cattlemen in their areas.
The group in southwest Arkansas have been visited several times for individual farm trips, office visits and two production meetings. Interest in their herds is developing since they are beginning to ask questions about different practices, concerns involving the beef industry and their herds and they are starting to request informantion on livestock.

4. Associated Knowledge Areas

KA Code	Knowledge Area
303	Genetic Improvement of Animals
306	Environmental Stress in Animals
301	Reproductive Performance of Animals
307	Animal Management Systems

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Government Regulations
- Other (market prices)

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- During (during program)

Evaluation Results

Three herds reporting 85 - 90% calf crop weaned.
Herd average weaning weights of 662 lbs and 563 lbs on one herd and 569 lbs on a second herd.

Key Items of Evaluation

percent calf crop weaned and average herd weaning weights.

Program #10

V(A). Planned Program (Summary)

1. Name of the Planned Program

Value Added Products

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
501	New and Improved Food Processing Technologies		25%		25%
502	New and Improved Food Products		25%		25%
503	Quality Maintenance in Storing and Marketing Food Products		25%		25%
712	Protect Food from Contamination by Pathogenic Microorgani		25%		25%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.3	0.0	0.4
Actual	0.0	0.3	0.0	0.5

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	70620	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	0	84495
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Conducted two experiments related to value added products. Experiment one unilized vegetable and fruit based edible films to protect against foodborne pathogens. Experiment two was a preliminary study of the effect of various antibrowning agents on fresh-cut sweet potatoes. A work shop for small processers was conducted of Hasard Analysis and Critical Control Points.

2. Brief description of the target audience

Local farmers and limited resource farmers and small processers.

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	0	0	0	0
2007	13	0	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	1	1

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Three abstracts and three presentations at the scientific annual meetings.

Year	Target	Actual
2007	0	2

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	Increase number of small farmers and producers who adopt UAPB's Fresh-Cut Processing Technology and utilize it for their fresh-cut process.

Outcome #1

1. Outcome Measures

Increase number of small farmers and producers who adopt UAPB's Fresh-Cut Processing Technology and utilize it for their fresh-cut process.

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Value added products gives the producer increased profit for their agricultural product. The farmer will recieve increased income at the farm gate because the value of the crop will increase with processing. Increased producer profit will add to community viability.

What has been done

We have initiated screening of natural fruit and vegetable anti-oxidants and anit-microbials for use in fresh cut greens.

Results

We have found that fruit stage of maturity affects the quality of fruit extracts for use as anti-oxidants.
A blackberry planting has been established. We have identified black berries as a good crop for value added processing. The planting will be used to the best cultivar for production and the fruit will be used in value-added experiments.

4. Associated Knowledge Areas

KA Code	Knowledge Area
501	New and Improved Food Processing Technologies
503	Quality Maintenance in Storing and Marketing Food Products
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occuring Toxi
502	New and Improved Food Products

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Other (Construction delay of Food Processing Laboratory)

Brief Explanation

The food processing laboratory to be used for value added research and out-reach was completed during the summer of 2007. The delay in completion resulted in a slower than expected initial pace for this program.

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- Before-After (before and after program)
- Comparisons between program participants (individuals,group,organizations) and non-participants

Evaluation Results

A survey was conducted to determine the interest of local farmers in value added (fresh cut) products. Over half of the the farmers (7 out of 13) answered yes. Other interest were: developing local markets, increasing markets for sweet potatoes and creating their own vegetable market, marketing fresh produce. They listed education, equipment, facilities and infrastructure for fresh-cut value-added products as areas of needs for getting into production.

Key Items of Evaluation

The program will be evaluated by participants and non-participants aware of value-added products developed in this program. Out-reach efforts related to value added products will be evaluated by sucess of the developed products.

Program #11

V(A). Planned Program (Summary)

1. Name of the Planned Program

Reduce Losses Due to Catfish Diseases

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
311	Animal Diseases		100%		100%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.9	0.0	0.1
Actual	0.0	0.7	0.0	0.1

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	83614	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	52974	0	8469
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Research will be conducted to determine the distribution of catfish trematodes and their impact on fish growth and survival and to assess the efficacy of trematode treatment methods. Extension programs will provide catfish disease diagnostic services, conduct field studies of trematode distribution and conduct education programs on trematode control.

2. Brief description of the target audience

Commercial catfish producers

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	500	1000	0	0
2007	500	3400	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of refereed journal articles

Year	Target	Actual
2007	1	0

Output #2

Output Measure

- Number of presentations

Year	Target	Actual
2007	2	7

Output #3

Output Measure

- Number of trade magazine articles

Year	Target	Actual
2007	1	0

Output #4

Output Measure

- Number of abstracts published

Year	Target	Actual
2007	2	3

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	Number of farmers helped with catfish disease cases
2	Number of catfish ponds sampled for trematodes
3	Number of educational meetings conducted to assist farmers with trematode detection and control

Outcome #1

1. Outcome Measures

Number of farmers helped with catfish disease cases

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	500	352

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Disease losses are a major expense in catfish production. Reduction of losses and treatment-related expenses will increase the competitiveness of the US catfish industry

What has been done

Provision of disease diagnostic services for fish farmers
Survey of the AR catfish industry for the catfish trematode and provision of advice to affected farms.
Biosecurity oeducation through publications and presentations at meetings
Research into the control of parasite vectors

Results

Almost the entire AR catfish industry was surveyed for trematodes.
Affected farms following Extension recommendations for trematode prevention are saving over $500,000/yr
Eight extension publications and presentations have alerted the industry to exotic disease risks and led to the development of a catfish industry VHS contingency plan

4. Associated Knowledge Areas

KA Code	Knowledge Area
311	Animal Diseases

Outcome #2

1. Outcome Measures

Number of catfish ponds sampled for trematodes

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	300	445

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Approximately 2,500 samples were submitted to the laboratory. Treatment advice was given to approximately 200 producer/managers.

What has been done

Sixty two farms involving 400 ponds were surveyed for presence of the catfish trematode. This represents 4,000 of Arkansas' 30,000 acres of catfish included in the survey.

Results

Trematode survey results showed 75% of producers with farms positive for catfish trematode have stocked black carp as a management tool. The remaining 25% of producers will stock black carp when sufficient numbers of black carp become available.

4. Associated Knowledge Areas

KA Code	Knowledge Area
311	Animal Diseases

Outcome #3

1. Outcome Measures

Number of educational meetings conducted to assist farmers with trematode detection and control

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	2	2

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Approximatel 2,500 samples were submitted to the laboratory. Treatment advice was given to approximately 200 producer/managers.

What has been done

Sixty two farms involving 400 ponds were surveyed for presence of the catfish trematode. This represents 4,000 of Arkansas' 30,000 acres of catfish included in the survey.

Results

Trematode survey results showed 75% of producers with farms positive for catfish trematode have stocked black carp as a management tool. The remaining 25% of producers will stock black carp when sufficient numbers of black carp become available.

4. Associated Knowledge Areas

KA Code	Knowledge Area
311	Animal Diseases

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Other (Statutory changes in the legality of chemical snail control)

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

1. **Evaluation Studies Planned**
   - Before-After (before and after program)
   - During (during program)

Evaluation Results

Key Items of Evaluation

Program #12

V(A). Planned Program (Summary)

1. Name of the Planned Program

Agricultural Policy

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
610	Domestic Policy Analysis		100%		100%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.1	0.0	1.4
Actual	0.0	0.1	0.0	0.8

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	3219	0	107603
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	0	69860
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Survey of 300 farmers that participate in the University of AR-Pine Bluff, Small Farm Project. Economic modeling and analysis of data collected will be done. Information will be disseminated to farmers via workshops, publications, pamphlets, newsletters and a farmer meeting.

2. Brief description of the target audience

Three-hundred (300)farmers that participate in the University of AR-Pine Bluff, Small Farm Project.

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	60	0	0	0
2007	30	30	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- 1. Number of published journal articles. 2. Number of presentations at professional conferences. 3. Number of presentatio

Year	Target	Actual
2007	60	30

Output #2

Output Measure

- Survey pre-test by Small Farm Project Extension Associates and small, limited-resource farmers. This information was useful

Year	Target	Actual
2007	{No Data Entered}	30

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	1. Number of changes in policy or policy applications recommended. 2. Increased participationo f minority and limited resource farmers in agricultural programs. 3. Changes in production and consumption behavior of minority and limited resource farmers in response to greater awareness of agricultural policy. 4. Increased access to credit and other programs by minority and limited resource farmers. 5. Increased level of policy-makers interest/attention to research findings. 6. Changes in service provision to limited resource and minority farmers by state and federal agricultural agents.

Outcome #1

1. Outcome Measures

1. Number of changes in policy or policy applications recommended. 2. Increased participationo f minority and limited resource farmers in agricultural programs. 3. Changes in production and consumption behavior of minority and limited resource farmers in response to greater awareness of agricultural policy. 4. Increased access to credit and other programs by minority and limited resource farmers. 5. Increased level of policy-makers interest/attention to research findings. 6. Changes in service provision to limited resource and minority farmers by state and federal agricultural agents.

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	60	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Small and Limited-Resource Farmers that participate in the Small Farm Project and individuals, organizations and agencies that provide assistance to farmers. The overall objective is to make policy recommendations that will benefit small and limited-resource farmers. However, policy recommendations cannot be given until the Survey has been conducted and survey data has been analyzed.

What has been done

A survey has been developed to solicit pertinent information related to the small farm project participant's socioeconomic characteristics and level of participation in government programs. A statistical analysis will be done once the survey has been conducted. An analysis of the historical records of the Small Farm Project participants is being conducted as well.

Results

A survey pre-test has been given to Small Farm Project Extension Associates and small, limited-resource farmers. This information has been used to develop more appropriate survey questions.

Based on the results of the Survey and analysis, policy recommendations will be made that will better benefit small, limited-resource farmers. Once the Survey has been conducted and analyzed the results will be disseminated to the communities of interest via the Small Farm Project Newsletter, Farmer Workshops and the Arkansas Environmental, Agricultural and Consumer Sciences Journal.

This is the first year of the project. Outcome measures including 1) changes in policy or policy application recommendations. 2) Increased participation of minority and limited resource farmers in agricultural programs. 3) Changes in production behavior of minority and limited resource farmers in responseto greater awareness of agricultural policy. 4) Increased access to credit and other programs by minority and limited resource farmers. 5) Increased level of policy-makers interest/attention to research findings. 6) Changes in service provision to limited resource and minority farmers by state and federal agricultural agents were not obtained in the first year of the project.

4. Associated Knowledge Areas

KA Code	Knowledge Area
610	Domestic Policy Analysis

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- During (during program)

Evaluation Results

No evaluation was planned for the first year of the project. However, a survey was developed to obtain information from small, limited-resource farmers. Information will be collected related to farmers' socioeconomic characteristics and level of participation in government programs. An analysis of the historical records of Small Farm Project participants is being conducted as well.

Key Items of Evaluation

Key items to be included in future evaluations are listed as follows: Measurement of the ability to obtain relevant information from farmers. Increase in small, limited-resource farmers awarness of agricultural programs and agricultural policies. Development of policy alternatives that better benefit small, limited-resource farmers.

Program #13

V(A). Planned Program (Summary)

1. Name of the Planned Program

Breeding and Biotechnology

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
201	Plant Genome, Genetics, and Genetic Mechanisms		20%		20%
202	Plant Genetic Resources		30%		30%
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plar		30%		30%
211	Insects, Mites, and Other Arthropods Affecting Plants		20%		20%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.1	0.0	2.1
Actual	0.0	0.1	0.0	1.5

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	3123	0	168232
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	0	139720
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

- Established an efficient regeneration system in cowpea(southernpea) for transferring insect resistant genes
- Evaluation of high yielding, disease and insect resistant varieties of southernpea for production and marketing as fresh peas

2. Brief description of the target audience

Small-Farm, limited resource farmers

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	50	75	25	50
2007	50	75	25	50

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	1
2007 :	0

Patents listed

None

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	1	1

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Production of improved cowpea cultivars that resist biotic and abiotic stresses. Publications in reviewed journals.

Year	Target	Actual
2007	{No Data Entered}	1

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	Production of disease and insect resistant southernpeas

Outcome #1

1. Outcome Measures

Production of disease and insect resistant southernpeas

2. Associated Institution Types

•1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Southernpeas are heavily infected by insects and pests causing yield loss for the limited-farmers resource farmers in Arkansas

What has been done

1. Protocol has been established to transfer insect resistant genes through gene transformation in southernpea.
2. Field evaluation of southernpea germplasm for the identification of cultivars that resist insects and pests in southernpea.

Results

- Established the efficient regeneration in southernpea
- Priliminary field evaluations has narrowed down the number of southernpea cultivars with characteristics such as podmaturity, pod placement, pod color etc.

4. Associated Knowledge Areas

KA Code	Knowledge Area
201	Plant Genome, Genetics, and Genetic Mechanisms
211	Insects, Mites, and Other Arthropods Affecting Plants
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants
202	Plant Genetic Resources

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- During (during program)

Evaluation Results

1. Selecting fresh-market southern pea varieties most appropriate for mechanical harvesting. Seven varieties, Early Scarlet, Quick Pick, Top Pick, Pinkeye, Empire, Epic, Encore and Mississippi Pinkeye were selected on qualitative traits important for mechanical harvesting of fresh cowpeas. The characteristics included are synchrony of pod maturity, pod placement above the plant canopy, and appropriate canopy height for easier mechanical harvesting. Varieties were also selected on fresh-pod color as the main consumer preference trait. These findings have narrowed down the number of candidate vaieties allowing for more focused, detailed evaluation studies and mechanical harvest testing of the selected few varieties.

2. Determining optimum staggered-planting interval(s) feasible to increase harvest window of fresh pea varieties. Eight established erect plant-type varieties of fresh pea were planted at weekly intervals for five weeks, creating experimental harvest intervals of 1,2,3,4 weeks. Preliminary findings were that i). current varieties do not differ sufficiently (7 days or longer) in maturity to allow possibilities same-time planting of two or more varieties differing in maturity periods to create sufficiently staggered harvest period(s). ii). Planting intervals of 2 or more weeks apart showed minimum (7 plus days) harvest intervals sought in all eight varieties. iii). Planting intervals of one week produced inadequate or inconsistent results and varied with the variety.

3. An efficient regeneration system has been established in cowpea through shoot meristem. Shoot meristems were isolated from embryos that were precultured for 3-5 days on Murashige and Skoog (MS) medium containing 8.9 µM benzylaminopurine (BA). The isolated shoot meristems were cultured on MS medium containing 0.89 µM BA. After 3-4 wks, multiple shoots were separated from the explant and cultured on half-strength MS medium for elongation and rooting. More than 90% of the regenerants formed roots. The rooted plantlets were transferred first to peat pellets and subsequently to the greenhouse. The plants were allowed to flower and set seed. The efficiency of regeneration in all four cultivars ranged from 76-87%, demonstrating a significant improvement over the published protocols (1-32%).

Key Items of Evaluation

Program #14

V(A). Planned Program (Summary)

1. Name of the Planned Program

Aquaculture Equipment and Information Development Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
402	Engineering Systems and Equipment		50%		50%
404	Instrumentation and Control Systems		50%		50%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	1.3	0.0	0.3
Actual	0.0	1.3	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	11917	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	124877	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

•Further test and refine aquaculture equipment •Develop recommendations for appropriate use of new technologies •Monitor commercial production facilities adopting new technologies •Publish results •Give presentations •Design of computer experiments •Conduct computer simulations by programming •Reconfiguration of simulation models with feedbacks from extension specialists.

2. Brief description of the target audience

•Fish farmers throughout the southern region, primarily Arkansas Catfish producers •Arkansas Game and Fish personel •Research scientists •County Extension agents Catfish farmers

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	5	50	0	0
2007	50	50	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Abstract Publications

Year	Target	Actual
2007	1	3

Output #2

Output Measure

- Number of Conference Presentations

Year	Target	Actual
2007	1	4

Output #3

Output Measure

- Number of Refereed Journal Publications

Year	Target	Actual
2007	1	1

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	Number of Commercial Arkansas Catfish Farmers Learning About New Technologies
2	Number of Commercial Arkansas Catfish Farmers Adopting New Technologies
3	Number of Commercial Arkansas Catfish Farmers Increasing Efficiency and Profitability
4	Number of Commerical Arkansas Catfish Farmers That Learned About New Methods to Access Fish Inventories
5	Number of Commercial Arkansas Fish Farmers That Learned About New Handheld Computer Technologies for Record Keeping
6	Number of Commercial Arkansas Catfish Farmers That Accurately Assess Their Fish Inventories
7	Number of Commerical Catfish Farmers That Utilized Hand Held Computer Technologies for Record Keeping
8	Number of Arkansas Fish Farmers tha Increased Their Management Efficiency or That Conducted Comprehensive Annual Financial and Economic Analysis Because of Better Fish Inventory Assessment Methods or the Use of Improved Compuerized Record Keeping Systems
9	Percentage of Cafish Farmers that are Informed About the Effectiveness and the Optimal Sample Size of theTrawl Sampling Method Through Extension Specialists
10	Percentage of Catfish Farmers that Effectively Adopt and Use the Optimal Sample Size of Trawl sampling for Inventory Estimation
11	Percentage of Satisfaction Rate of Farmers who Adopted the Trawl Sampling with Recommended Sample Size for Inventory Estimation

Outcome #1

1. Outcome Measures

Number of Commercial Arkansas Catfish Farmers Learning About New Technologies

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	50	69

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Catfish producers, processors, fish haulers

What has been done

Developed inexpensive oxygen saturation equipment and fish grading systems

Results

Three presentations and four demonstrations were conducted.

4. Associated Knowledge Areas

KA Code	Knowledge Area
404	Instrumentation and Control Systems
402	Engineering Systems and Equipment

Outcome #2

1. Outcome Measures

Number of Commercial Arkansas Catfish Farmers Adopting New Technologies

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	5	9

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Fish producers

What has been done

Two catfish hatcheries have adopted oxygen saturation equipment

Results

Oxygen levels have been improved while reducing overall spending costs.

4. Associated Knowledge Areas

KA Code	Knowledge Area
404	Instrumentation and Control Systems

Outcome #3

1. Outcome Measures

Number of Commercial Arkansas Catfish Farmers Increasing Efficiency and Profitability

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	4	2

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Foreign competition and increased feed costs have increased the need for farm efficiencies.

What has been done

Educational efforts, articles and meetings to encourage farmers to use new instrumentation

Results

Two farms have adopted more efficient methods

4. Associated Knowledge Areas

KA Code	Knowledge Area
404	Instrumentation and Control Systems

Outcome #4

1. Outcome Measures

Number of Commerical Arkansas Catfish Farmers That Learned About New Methods to Access Fish Inventories

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	3	6

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

catfish producers

What has been done

Taught producers about inventory methods

Results

Producers may use a combination of methods to increase the accuracy of their fish inventory assessments.

4. Associated Knowledge Areas

KA Code	Knowledge Area
404	Instrumentation and Control Systems

Outcome #5

1. Outcome Measures

Number of Commercial Arkansas Fish Farmers That Learned About New Handheld Computer Technologies for Record Keeping

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	50	18

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Producers, processors

What has been done

Presentations at national and producer association meetings on handheld technologies

Results

A number of producers and processors contacted the extension service for help on adopting handheld computer technologies

4. Associated Knowledge Areas

KA Code	Knowledge Area
404	Instrumentation and Control Systems

Outcome #6

1. Outcome Measures

Number of Commercial Arkansas Catfish Farmers That Accurately Assess Their Fish Inventories

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	3	5

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Producers

What has been done

The extension service assists farmers assessing fish inventories on request or in ponds used for commercial scale field studies

Results

Fish inventories were assessed in a number of commercial ponds

4. Associated Knowledge Areas

KA Code	Knowledge Area
404	Instrumentation and Control Systems

Outcome #7

1. Outcome Measures
Number of Commerical Catfish Farmers That Utilized Hand Held Computer Technologies for Record Keeping

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	2	2

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

catfish producers

What has been done

Demonstrate PDA on farms

Results

A number of commercial producers use handheld computer technologies

4. Associated Knowledge Areas

KA Code	Knowledge Area
404	Instrumentation and Control Systems
402	Engineering Systems and Equipment

Outcome #8

1. Outcome Measures

Number of Arkansas Fish Farmers tha Increased Their Management Efficiency or That Conducted Comprehensive Annual Financial and Economic Analysis Because of Better Fish Inventory Assessment Methods or the Use of Improved Compuerized Record Keeping Systems

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	1	2

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Producers, Processors

What has been done

Customized computer programs for record keeping were developed on request for producers or processors.

Results

Entities that adopted the customized computer programs claims that it improved their record keeping and management efficiency.

4. Associated Knowledge Areas

KA Code	Knowledge Area
404	Instrumentation and Control Systems

Outcome #9

1. Outcome Measures

Percentage of Cafish Farmers that are Informed About the Effectiveness and the Optimal Sample Size of theTrawl Sampling Method Through Extension Specialists

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	10	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Producers

What has been done

Preliminary studies on the trawl were conducted

Results

A more exhaustive study has been developed to answer further questions about the trawl.

4. Associated Knowledge Areas

KA Code	Knowledge Area
404	Instrumentation and Control Systems

Outcome #10

1. Outcome Measures

Percentage of Catfish Farmers that Effectively Adopt and Use the Optimal Sample Size of Trawl sampling for Inventory Estimation

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	1	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Producers

What has been done

Studies were conducted on the trawl

Results

More questions need to be answered

4. Associated Knowledge Areas

KA Code	Knowledge Area
404	Instrumentation and Control Systems

Outcome #11

1. Outcome Measures

Percentage of Satisfaction Rate of Farmers who Adopted the Trawl Sampling with Recommended Sample Size for Inventory Estimation

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	50	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Producers

What has been done

Studies

Results

More studies are needed.

4. Associated Knowledge Areas

KA Code	Knowledge Area
404	Instrumentation and Control Systems

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Other ()

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- Before-After (before and after program)
- During (during program)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

Program #15

V(A). Planned Program (Summary)

1. Name of the Planned Program

Improving Hatchery Production Efficiency

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
301	Reproductive Performance of Animals		80%		80%
307	Animal Management Systems		20%		20%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.4	0.0	0.2
Actual	0.0	0.2	0.0	1.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	11917	0	70714
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	13472	0	152923
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

•Conduct field trials •Conduct method demonstrations •Publish results •Give presentations 1. Conduct research to determine the relationship between egg size and size at hatch for hybrid striped bass. 2. Conduct research to re-defined the relation between temperature and egg stage duration. 3. Conduct research to determine ways of reducing cannibalism in tank culture of hybrid striped bass 4. Partner with Keo Fish Farm, Inc. to acquire seed stock from specific males and females

2. Brief description of the target audience

•Catfish farmers throughout Arkansas •County Extension agents Hybrid striped bass fingerling producers Hybrid striped bass grow-out facility operators

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	4	50	0	0
2007	26	346	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Abstracts

Year	Target	Actual
2007	3	5

Output #2

Output Measure

- Number of Presentations

Year	Target	Actual
2007	3	6

Output #3

Output Measure

- Number of Refereed Journal Articles

Year	Target	Actual
2007	2	2

Output #4

Output Measure

- Number of Popular Articles and Newsletter Articles

Year	Target	Actual
2007	1	1

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	Number of Fingerling Producers That Learned What We Know
2	Number of Scientists That Learned What We Know
3	Number of Finglerling Producers That Use What We Know
4	Number of Grow-out Operations That Use What We Know
5	Percent of Increase in Hybrid Striped Bass Fingerlings Produced in Arkansas
6	Percent Increase in Hybrid Striped Bass Fingerlings Produced in Tanks
7	Number of Arkansans Gaining Access to Hybrid Catfish Information
8	Number of Arkansans Adopting Hybrid Catfish Production
9	Number of Arkansans Increasing Efficiency, Profitability Through Hybrid Catfish Production

Outcome #1

1. Outcome Measures

Number of Fingerling Producers That Learned What We Know

2. Associated Institution Types

•1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	3	17

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Finglerling producers in the state of Arkansas are interested in producing hybrid catfish. This practice requires a novel approach to spawning catfish and the integration of experimental data into practical approaches for the farmer. Improving the efficiency of hybrid catfish fingerling production will make hybrid fingerlings more affordable and more available to producers. The hybrid catfish has been shown to grow fast with an excellent feed conversion ratio. However, the cost of the fingerlings must be reduced to improve the profit margins for producers.

What has been done

On going collaborations with Baxter Land Company in 2007 tested gonadotropin implants were also initiated on the campus of UAPB. UAPB researchers act as a conduit for reporting data describing the use of spawning aids to the INAD permit holder, the USFWS.

Results

Trials revealed that carp pituitary of 10 mg/kg led to a higher percentage of ovulating females than a dose of 100 ug/kg of LHRH.This data has been implemented into the decisions for artificial spawning of channel catfish in 2008. Final reports for INAD use of LHRH and carp pituitary use were submitted to the USFWS.

4. Associated Knowledge Areas

KA Code	Knowledge Area
301	Reproductive Performance of Animals

Outcome #2

1. Outcome Measures

Number of Scientists That Learned What We Know

2. Associated Institution Types

•1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	20	102

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Examinations of artificial spawning practices.

What has been done

Ongoing and planned collaborations with USDA laboratories in Stoneville Mississippi are being developed

Results

By understanding the science as well as the practical implications of mass-producing hybrid catfish, scientists can better serve the industry.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #3

1. Outcome Measures

Number of Finglerling Producers That Use What We Know

2. Associated Institution Types

•1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	3	11

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Artificial spawning of channel catfish.

What has been done

Baxter Land Company currently is the only Arkansas fingerling producer investing capital and energy in the development of artificial spawning practices for the production of hybrid catfish. One additional Arkansas fingerling producer has expressed some interest in the procedures involved.

Results

Two hatcheries adopted oxygen saturation technology and mproved broodfish maturation techniques to improve overall operations.

4. Associated Knowledge Areas

KA Code	Knowledge Area
301	Reproductive Performance of Animals

Outcome #4

1. Outcome Measures

Number of Grow-out Operations That Use What We Know

2. Associated Institution Types

•1890 Extension
•1890 Research

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	10	19

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Hybrid catfish have been shown to grow faster than channel catfish with improved food conversion efficiency, but they can not be harvested with traditional harvesting gear.

What has been done

We developed a new grading sock.

Results

Growout operations have adopted improved harvesting methodologies developed at UAPB specifically for pond-grading food-size hybrid catfish.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #5

1. Outcome Measures
Percent of Increase in Hybrid Striped Bass Fingerlings Produced in Arkansas

2. Associated Institution Types

•1890 Research

3a. Outcome Type:
Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	2	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Hybrid striped bass priducers want to produce fingerlings

What has been done

Research results have been presented at meetings that producers and farmers have attended.

Results

Hybrid striped bass fingerling producers have information to help increase production; at this time the improvements ahve not been implemented.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems
301	Reproductive Performance of Animals

Outcome #6

1. Outcome Measures

Percent Increase in Hybrid Striped Bass Fingerlings Produced in Tanks

2. Associated Institution Types

•1890 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	2	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Hybrid striped bass producers would like to eventually raise fingerlings in tanks.

What has been done

Research results have been presented to producers at meetings.

Results

While hybrid striped bass fingerling producers would like to raise hybrid striped bass in tanks to increase production, to my knowledge no one in private practice is raising fingerlings in tanks.

4. Associated Knowledge Areas

KA Code	Knowledge Area
301	Reproductive Performance of Animals

Outcome #7

1. Outcome Measures

Number of Arkansans Gaining Access to Hybrid Catfish Information

2. Associated Institution Types

•1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	45	120

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Artificial spawning of channel catfish

What has been done

UAPB personnel at Baxter Land Company continue to develop approaches to the production of hybrid fry. UAPB researchers have supplied information to additional Arkansas fingerling producers on infrastructue requirements and outlined INAD reporting requirements for the use of chemicals not yet registered by the USFDA that are currently used under the INAD permit maintained by the USFWS.

Results

Arkansas producers are actively seeking information regarding teh economics and practical implications of growing hybrid catfish. Our research and extension efforts are helping producers decide if this is a good fish for their particular farm.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #8

1. Outcome Measures

Number of Arkansans Adopting Hybrid Catfish Production

2. Associated Institution Types

•1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	5	4

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Artificial spawning of channel catfish

What has been done

One fingerling producer, the Baxter Land Company, in Arkansas has invested significant capital and energy into the production of hybrid catfish.

Results

One fingerling producer making hybrid catfish

4. Associated Knowledge Areas

KA Code	Knowledge Area
301	Reproductive Performance of Animals

Outcome #9

1. Outcome Measures

Number of Arkansans Increasing Efficiency, Profitability Through Hybrid Catfish Production

2. Associated Institution Types

•1890 Extension
•1890 Research

3a. Outcome Type:
Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	4	3

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Improved efficiency is needed to improve profitability of catfish production

What has been done

Production studies have been conducted

Results

Five foodfish growers have integrated hybrid catfish into their production strategy

4. Associated Knowledge Areas

KA Code	Knowledge Area
301	Reproductive Performance of Animals

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Other ()

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- Before-After (before and after program)
- During (during program)

Evaluation Results

Key Items of Evaluation

Program #16

V(A). Planned Program (Summary)

1. Name of the Planned Program

Improving Disease Status for Baitfish Production and Marketing

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
311	Animal Diseases		50%		50%
312	External Parasites and Pests of Animals		25%		25%
313	Internal Parasites in Animals		25%		25%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	1.2	0.0	0.3
Actual	0.0	1.1	0.0	0.3

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	111574	0	85398
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	46276	0	95421
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Research will be conducted to • Improve diagnostic tests for important pathogens (viral, parasitic, and bacterial) • Improve understanding of the epidemiology of important pathogens • Discover new pathogens responsible for fish losses • Improve methods to eradicate pathogens from afflicted farms.

2. Brief description of the target audience

Commercial baitfish producers.

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	40	60	0	0
2007	445	706	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	12	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of publications

Year	Target	Actual
2007	9	12

Output #2

Output Measure

- Number of presentations

Year	Target	Actual
2007	3	27

Output #3

Output Measure

- Number of experiments and field trials of treatments for fish parasite and parasite vectors conducted on farms

Year	Target	Actual
2007	4	3

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	Percent of Arkansas bait and ornamental fish production farms participating in the State certification program
2	Number of farms that have attempted eradication procedures

Outcome #1

1. Outcome Measures

Percent of Arkansas bait and ornamental fish production farms participating in the State certification program

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	75

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Diseases of bait and ornamental fish decrease farm profits and may restrict access to markets

What has been done

Biosecurity education for farms
Bait and ornamental fish disease diagnosis
Farm certification
Regulator education
Pathogen detection research
Epidemiological research

Results

Seven publications of biosecurity including a SRAC fact sheet
Nine presentations on biosecurity at producer meetings
More than 1200 fish disease cases
Health inspections on more than 20,000 fish
Direct assistance in the establishment of the AR Bait and Ornamental Fish Certification Program
Three workshops and 4 additional presentations for fish health regulator education
Development of detection methods for 3 fish pathogens
Research showing that the GSV virus is widespread and not an important pathogen has prevented the loss of a market worth more than $1,000,000 per year to Arkansas farmers.
Discovery of the importance and prevention of goldfish herpesvirus disease have prevented the loss of more than $100,000 worth of fish through a single distributor (practices that will be more widely adopted next year).

4. Associated Knowledge Areas

KA Code	Knowledge Area
311	Animal Diseases

Outcome #2

1. Outcome Measures

Number of farms that have attempted eradication procedures

2. Associated Institution Types

•1890 Extension
•1890 Research

3a. Outcome Type:
Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	7

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Diseases of bait and ornamental fish decrease farm profits and may restrict access to markets.

What has been done

Biosecurity education for farms
Bait and ornamental fish disease diagnosis
Farm certification
Regulator education
Pathogen detection research
Epidemiological research

Results

Seven publications of biosecurity including a SRAC fact sheet
Nine presentations on biosecurity at producer meetings
More than 1200 fish disease cases
Health inspections on more than 20,000 fish
Direct assistance in the establishment of the AR Bait and Ornamental Fish Certification Program
Three workshops and 4 additional presentations for fish health regulator education
Development of detection methods for 3 fish pathogens
Research showing that the GSV virus is widespread and not an important pathogen has prevented the loss of a market worth more than $1,000,000 per year to Arkansas farmers.
Discovery of the importance and prevention of goldfish herpesvirus disease have prevented the loss of more than $100,000 worth of fish through a single distributor (practices that will be more widely adopted next year).

4. Associated Knowledge Areas

KA Code	Knowledge Area
311	Animal Diseases
312	External Parasites and Pests of Animals
313	Internal Parasites in Animals

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Other (Statutory changes in state, federal, and international fish health regulations)

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- Before-After (before and after program)
- During (during program)

Evaluation Results

Key Items of Evaluation

Program #17

V(A). Planned Program (Summary)

1. Name of the Planned Program

Controlling Predators of Larval Fish

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
312	External Parasites and Pests of Animals		100%		100%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.3	0.0	0.1
Actual	0.0	0.3	0.0	0.1

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	60863	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	49625	0	4186
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Research will be conducted to • Determine the toxicity of pesticides to fish and to target organisms • Extension programs will run field trials of promising compounds • Provide regulatory expertise for new labels • Demonstrate proper use of new chemicals to farmers • Provide educational materials regarding the newly developed treatments during workshops, farm visits and personal letters.

2. Brief description of the target audience

Commercial baitfish producers.

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	40	100	0	0
2007	20	30	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Publications

Year	Target	Actual
2007	2	0

Output #2

Output Measure

- Number of Presentations.

Year	Target	Actual
2007	3	0

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	Number of major farms adopting treatments
2	Number of farms reporting improved control

Outcome #1

1. Outcome Measures

Number of major farms adopting treatments

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Invertebrate predators that eat small fish cause significant losses for the bait and ornamental fish industry

What has been done

Identification of copepod species present in the region. Tests of chemical control methods for copepods. Evaluation of predator control methods on farms.

Results

The prevalance of copepods was determined in aquaculture ponds. The most common copepods that can negatively effect larval fish were calanoids and cladacerans. These copepods were identified as two species of calanoid, Arctodiaptomus dorsalis (Marsh), which is the dominant species found, Leptodiaptomus siciloides (Lilljeborg) and one species of cyclopoid, Acanthocyclops trajani (Mirabdullayev & Defaye).

4. Associated Knowledge Areas

KA Code	Knowledge Area
312	External Parasites and Pests of Animals

Outcome #2

1. Outcome Measures

Number of farms reporting improved control

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Invertebrate predators that eat small fish cause significant losses for the bait and ornamental fish industry.

What has been done

Identification of copepod species present in the region. Tests of chemical control methods for copepods. Evaluation of predator control methods on farms

Results

The prevalance of copepods was determined in aquaculture ponds. The most common copepods that can negatively effect larval fish were calanoids and cladacerans. These copepods were identified as two species of calanoid, Arctodiaptomus dorsalis (Marsh), which is the dominant species found, Leptodiaptomus siciloides (Lilljeborg) and one species of cyclopoid, Acanthocyclops trajani (Mirabdullayev & Defaye).

4. Associated Knowledge Areas

KA Code	Knowledge Area
312	External Parasites and Pests of Animals

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Other (Statutory changes in state and federal pesticide regulations)

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- Before-After (before and after program)
- During (during program)

Evaluation Results

Key Items of Evaluation

Program #18

V(A). Planned Program (Summary)

1. Name of the Planned Program

Improving Management Techniques for Baitfish

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
302	Nutrient Utilization in Animals		45%		45%
307	Animal Management Systems		45%		45%
308	Improved Animal Products (Before Harvest)		10%		10%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.5	0.0	0.5
Actual	0.0	1.0	0.0	0.4

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	69637	0	206932
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	56591	0	160200
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

A series of studies are being conducted on the components of an egg collection, removal and incubation system, and on new feed ingredients and strategies for feeding baitfish. Outputs will include a presentation, a popular article and journal articles. Year 1. Journal article, popular article, abstract, poster presentation. Year 2. Newsletter article Year 3. Abstract, presentation Year 4. Journal article Year 5. Newsletter article

2. Brief description of the target audience

Commercial baitfish producers

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	20	40	0	0
2007	555	2465	60	50

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	9	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Peer Reviewed Journal Articles

Year	Target	Actual
2007	1	9

Output #2

Output Measure

- Number of Abstracts

Year	Target	Actual
2007	1	14

Output #3

Output Measure

- Number of Articles in Producer Trade Magazines

Year	Target	Actual
2007	1	0

Output #4

Output Measure

- Number of Fact Sheets and Newsletters

Year	Target	Actual
2007	1	3

Output #5

Output Measure

- Number of Presentations

Year	Target	Actual
2007	0	16

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	Number of producers who learn project results
2	Number of producers willing to test successful ingredients or feeding strategies on a commercial scale
3	Percent of baitfish producers (by acreage) adopting diets with new ingredients that are commercially available, or number of new feeding strategies implemented by industry

Outcome #1

1. Outcome Measures

Number of producers who learn project results

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	1	30

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Current production methods for fathead minnows are inefficient, with low yields and variable sizes.

What has been done

A new hatchery method for fathead minnows is under development. Research studies on egg collection and incubation, and try stocking, have been conducted, and the results presented at the baitfish farmers association meetings

Results

Progress has been made in developing the new method, and research needs have been identified. Baitfish producers have been kept informed on the research through a newsletter article.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #2

1. Outcome Measures

Number of producers willing to test successful ingredients or feeding strategies on a commercial scale

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	3	1

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Fish producers are interested in reducing fish mortality through the use of probiotics

What has been done

Research studies have shown that prebiotics may reduce stress-related fish mortality.

Results

Producers have talked with a local feed mill and with a commercial producer of prebiotics about adding the prebiotic to baitfish diets. Cost may limit implementation, as small-scale implementation is not attractive to the producer of the prebiotic, and they may charge more for the product than if feed producers could buy the prebiotic in larger amounts

4. Associated Knowledge Areas

KA Code	Knowledge Area
302	Nutrient Utilization in Animals

Outcome #3

1. Outcome Measures

Percent of baitfish producers (by acreage) adopting diets with new ingredients that are commercially available, or number of new feeding strategies implemented by industry

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	75	15

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Commercial production of baitfish is relatively inefficient. Feed comprises a major part of production costs. Producers are interested in novel diet ingredients and feeding strategies that can improve the profitability of their industries. Baitfish are marketed as live products, so hardiness and resilience must be considered in designing diets and feeding strategies for them.

What has been done

Research has been conducted and known variables in diets for the study include:
1. Geed additive (Grobiotic)
2. Lipid level
3. Plant versus animal protein sources

Results

Grobiotic stimulated the specific immune responses in golden shiners in indoor and outdoor systems, but few other performance criteria were affected. High-fat diets enhanced body fat and survival in outdoor systems. Fish meal did not produce any benefits relative to other protein sources.

4. Associated Knowledge Areas

KA Code	Knowledge Area
308	Improved Animal Products (Before Harvest)

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Other (fuel costs, weather, restrictions on interstate transport and sales of baitfish, animal rights movement)

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

1. **Evaluation Studies Planned**
   - Before-After (before and after program)
   - During (during program)

Evaluation Results

Key Items of Evaluation

Program #19

V(A). Planned Program (Summary)

1. Name of the Planned Program

Research Verification

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
307	Animal Management Systems		100%		0%
	Total		100%		0%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.5	0.0	0.0
Actual	0.0	0.5	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	11917	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	21845	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

• Develop management recommendations • Monitor commercial catfish ponds • Publish results • Give presentations

2. Brief description of the target audience

• Arkansas catfish farmers • Research scientists • County Extension agents

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	250	3800	0	0
2007	250	100	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	2	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Publications

Year	Target	Actual
2007	2	2

Output #2

Output Measure

- Number of Presentations

Year	Target	Actual
2007	4	2

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	Number of commercial Arkansas baitfish farmer learning about Extension recommendations and program results
2	Number of Commercial Arkansas catfish farmers adopting Extension recommendations
3	Number of commercial Arkansas catfish farmers increasing efficiency and profitability

Outcome #1

1. Outcome Measures

Number of commercial Arkansas baitfish farmer learning about Extension recommendations and program results

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	90	50

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Numerous commercial baitfish farmers are still hesitant to feed their baitfish large quantities of commercial feed because they are worried that it may deteriorate the ponds water quality and increase fish mortalities even though scientific research has shown that feeding baitfish improve yields and profit.

What has been done

Three highly fed commercial golden shiner ponds equipped with a number of electric paddlewheel aerators and oxygen monitoring systems were monitored throughout 2007.

Results

Despite the relatively high feeding rates reaching over 20 lb/ac/day, water quality parameters such as dissolved oxygen concentration, total ammonia nitrogen, and pH remained within safe limits for golden shiner production. The nightly paddlewheel aeration prevented oxygen depletion. Yields reach 800 lb/ac. The farmers where the study was conducted decided to expand the feeding and aeration recommendations to most of his farm in 2008.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #2

1. Outcome Measures

Number of Commercial Arkansas catfish farmers adopting Extension recommendations

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	2	1

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Numerous commercial baitfish farmers are still hesitant to feed their baitfish large quantities of commercial feed because they are worried that it may deteriorate the ponds water quality and increase fish mortalities even though scientific research has shown that feeding baitfish improve yields and profit.

What has been done

Highly fed commercial golden shiner ponds equipped with a number of electric paddlewheel aerators and oxygen monitoring systems were monitored throughout 2007.

Results

The cooperating farmer in the study adopted Extension recommendations on a selected number of ponds.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #3

1. Outcome Measures

Number of commercial Arkansas catfish farmers increasing efficiency and profitability

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	2	1

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Numerous commercial baitfish farmers are still hesitant to feed their baitfish large quantities of commercial feed because they are worried that it may deteriorate the ponds water quality.

What has been done

Highly fed commercial golden shiner ponds equipped with a number of electric paddlewheel aerators and oxygen monitoring systems were monitored throughout 2007.

Results

The cooperating farmer in the study increased fish yields in ponds where Extension recommendations were adopted.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Other (Cash flow and fish supply on the cooperating farm catfish prices and demand operating costs and cash flow baitfish demand)

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- Before-After (before and after program)
- During (during program)

Evaluation Results

Key Items of Evaluation

Program #20

V(A). Planned Program (Summary)

1. Name of the Planned Program

Aquaculture Alternatives in Arkansas

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
302	Nutrient Utilization in Animals		10%		10%
307	Animal Management Systems		50%		50%
308	Improved Animal Products (Before Harvest)		10%		10%
311	Animal Diseases		10%		10%
602	Business Management, Finance, and Taxation		10%		10%
603	Market Economics		10%		10%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	1.3	0.0	0.8
Actual	0.0	1.2	0.0	0.8

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	97794	0	102214
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	88830	0	131545
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Compile existing information on alternative aquaculture crops, budgets and markets for those crops. Disseminate the information through newsletters, fact sheets, presentations, and individual contacts. Year 1. Fact sheet on aquaculture alternatives. Field day poster presentation on alternative species. Year 2. Update fact sheet on small scale catfish production. Revise fact sheet on baitfish budgets. Year 3. Revise fact sheet on holding fish for sale. Year 4. Revise fact sheet on using existing ponds for fish production. Year 5. Revise fact sheet on cleaning fish for sale.

2. Brief description of the target audience

County Extension faculty, existing fish farmers and potential farmers.

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	60	350	0	0
2007	418	2240	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Peer Reviewed Journal Articles

Year	Target	Actual
2007	2	6

Output #2

Output Measure

- Number of publications

Year	Target	Actual
2007	2	6

Output #3

Output Measure

- Number of Presentations

Year	Target	Actual
2007	4	14

Output #4

Output Measure

- Number of Published Abstracts

Year	Target	Actual
2007	3	12

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	Number of Arkansans gaining access to needed information
2	Number of Arkansans adopting sound management practices
3	Number of Arkansans Increasing Efficiency, and Profitability
4	Number of researchers and producers gaining knowledge from results from presentations and publications
5	Number of researchers that will cite results
6	Number of producers that will modify feeding and management
7	Percent decrease in cool weather mortalities and decrease in off-flavor
8	Percent of cool weather plankton-related problems that will decrease
9	Percent of warm weather plankton-related problems that will decrease
10	Number of producers willing to test successful ingredients or feeding strategies on a commerical scale
11	Percent of diets with new ingredients that are commercially available, or number of new feeding strategies implemented by industry

Outcome #1

1. Outcome Measures

Number of Arkansans gaining access to needed information

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	300	638

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Fish farmers are seeking new crops to diversify their operations. Baitfish markets are stagnant and catfish sales have dropped.

What has been done

A fact sheet was written and distributed through county agents and on-line. Notebooks with reference materials were assembled and contents supplied to clients looking for alternative crops.

Results

There have been numerous request for largemouth bass and crawfish information. At least one catfish farmer is testing bass culture

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #2

1. Outcome Measures

Number of Arkansans adopting sound management practices

2. Associated Institution Types

•1890 Extension
•1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	150	95

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Increased foreign competition and higher feed costs are forcing farmers to reduce costs by improving management practices.

What has been done

Research and extension projects to determine and demonstrate improved methods.

Results

Farms have adopted new practices leading to greater efficiency.

4. Associated Knowledge Areas

KA Code	Knowledge Area
302	Nutrient Utilization in Animals
307	Animal Management Systems

Outcome #3

1. Outcome Measures

Number of Arkansans Increasing Efficiency, and Profitability

2. Associated Institution Types

•1890 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	50	53

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Increased foreign competition and higher feed costs are forcing farmers to reduce costs by improving farm efficiency.

What has been done

Research projects projects to determine farm management strategies that lead to increased efficiencies.

Results

Fifty three farms have adopted new management strategies

4. Associated Knowledge Areas

KA Code	Knowledge Area
602	Business Management, Finance, and Taxation

Outcome #4

1. Outcome Measures

Number of researchers and producers gaining knowledge from results from presentations and publications

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	200	350

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #5

1. Outcome Measures

Number of researchers that will cite results

2. Associated Institution Types

•1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	7

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

In time of high feed prices, anything that a farmer can do to improve efficiency will lead to lower production costs.

What has been done

During the last year, an article was written for Arkansas Aquafarming that provided information for farmers to evaluate their well pumps

Results

This provided a tool for the producer to manage their pumping costs and make decision on when to replace or repair a well pump.

4. Associated Knowledge Areas

KA Code	Knowledge Area
603	Market Economics
602	Business Management, Finance, and Taxation

Outcome #6

1. Outcome Measures

Number of producers that will modify feeding and management

2. Associated Institution Types

•1890 Research

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	7

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Numerous request received for information about alternative species

What has been done

At this time, several producers have explored raising species other than catfish or in order to diversify their operations and explore other marketing opportunities.

Results

Over 500 acres of ponds have been stocked with largemouth bass, freshwater prawns or crayfish.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #7

1. Outcome Measures
Percent decrease in cool weather mortalities and decrease in off-flavor

2. Associated Institution Types

•1890 Research

3a. Outcome Type:
Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	10	3

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Fish farmers carryover a large quantity of fish during the cool weather. During the carry over mortalities often occur and off-flavor can occur. Less work has been done on this period and with these problems than during the warm weather growing season. In addition, some farmers feed more agressively than other farmers during the cool weather and the effects are not known.

What has been done

Sampling on four catfish farms and three ponds per farm was started Dec. 06. Weekly sampling was continued to April 07 and then monthly to Dec 07 when sampling was again performed weekly. A total of 2952 measurements were taken.
Sampling on 10 UAPB ponds, five with winter feeding and five with no feeding, was conducted in conjunction with another study. Weekly sampling was begun Dec. 7, 2006 and continued to Feb. 22, 2007. A total of 180 measurements were taken.

Results

Data has not been analyzed from the catfish farm ponds. Feeding in the UAPB study resulted in significantly reduced occurrences of off-flavor algae

4. Associated Knowledge Areas

KA Code	Knowledge Area
308	Improved Animal Products (Before Harvest)

Outcome #8

1. Outcome Measures

Percent of cool weather plankton-related problems that will decrease

2. Associated Institution Types

•1890 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	50	10

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Cool weather plankton problems may be similar to warm weather plankton problems in tendency to bloom and crash, and toxicity. In addition, cool weather plankton may be lower in abundance and photosynthetic activity. Zooplankton during the cool weather and relationships with algae abundance is not known.

What has been done

Sampling on four catfish farms and 3 ponds on each farm was begun in Dec 06. Weekly sampling continued into April 07 and thereafter to Dec 07 monthly samples were taken. A total of 1104 measurements were made.
UAPB ponds were sampled from Dec. 06 to Feb 07 on a monthly basis. Five ponds were fed and five ponds were not fed. A total of 360 measurements were made.

Results

Data from the catfish ponds have not been analyzed. In the UAPB pond study, feeding resulted in a more than double density of phytoplankton, but not biomass. Thus algae were smaller with feeding. Species composition did not significantly differ between treatments. Zooplankton density and composition also did not significantly differ between treatments.

4. Associated Knowledge Areas

KA Code	Knowledge Area
308	Improved Animal Products (Before Harvest)
307	Animal Management Systems

Outcome #9

1. Outcome Measures

Percent of warm weather plankton-related problems that will decrease

2. Associated Institution Types

•1890 Research

3a. Outcome Type:
Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	10	8

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Off-flavor algae species that occur in warm weather may overwinter in the pond sediments as spores. Identification of spores may allow proactive treatment to reduce warm weather plankton problems. In addition, knowledge of algal populations leading to the warm weather season may contribute to understanding other algal problems before they develop.

What has been done

Duplicate sediment samples were taken in each commercial catfish pond monthly during the sampling period. A total of 960 measurements were taken. Duplicate sediment samples were taken in UAPB ponds during the sample period. A total of 180 measurements were taken.

Results

No identifiable off-flavor algal spores were seen in sediments samples. However, spores were identified in the plankton in July and August of the major off-flavor alga and a major scum-producing alga.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems
308	Improved Animal Products (Before Harvest)

Outcome #10

1. Outcome Measures
Number of producers willing to test successful ingredients or feeding strategies on a commerical scale

2. Associated Institution Types

•1890 Research

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	4	8

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Producers need basic knowledge on nutrient requirements of alternative species to select the most appropriate commercial diets available. Non-fish-meal ingredients are being used in some bass feeds. Use will escalate as fish meal has become prohibitively expensive to use in practical fish feeds.

What has been done

New diet formulations, ingredients, and feeding strategies must be tested in different species under controlled conditions to provide scientific foundation for changing existing diet formulations and feeding strategies.

Results

Willingness of producers to test successful ingredients or feeding strategies on a commercial scale.

4. Associated Knowledge Areas

KA Code	Knowledge Area
302	Nutrient Utilization in Animals

Outcome #11

1. Outcome Measures

Percent of diets with new ingredients that are commercially available, or number of new feeding strategies implemented by industry

2. Associated Institution Types

•1890 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	75	7

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Commercial production techniques for alternative species vary a lot relative to those for major aquaculture species.

What has been done

New diet formulations, ingredients, and feeding strategies must be tested in different species under controlled conditions to provide a scientific foundation for changing existing diet formulations and feeding strategies.

Results

Research results were provided to producers to make them aware of the potential for new diet formulations and feeding strategies. Many new diets with ingredients other than marine fish meals and oils are available, and they have been influenced by research results from many different sources. Replacement of marine fish meals and oils in diets of all cultured fish will continue to be a major research focus for fish nutritionists, and producers will be forced to adopt diets with alternative ingredients to stay economically viable.

4. Associated Knowledge Areas

KA Code	Knowledge Area
302	Nutrient Utilization in Animals

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- Before-After (before and after program)
- During (during program)

Evaluation Results

Key Items of Evaluation

Program #21

V(A). Planned Program (Summary)

1. Name of the Planned Program

1890 Family Resource Management

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
801	Individual and Family Resource Management		40%		0%
806	Youth Development		60%		0%
	Total		100%		0%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.6	0.0	0.0
Actual	0.0	0.6	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	33750	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The 1890 Family and Resource Management Program was conducted through a number of organized groups and included educational programs (workshops) seminars, tailored publications that provided information on money management written for low-literacy individuals, public service announcements, and articles in Extension newsletters.

2. Brief description of the target audience

The 1890 Family and Resource Management Program targeted youth ages 6-18, young adults, parents, limited-resource farmers and faith-based and community organizations.

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	300	500	200	500
2007	275	0	200	150

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	4	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Many delivery modes will be used to reach the target audiences including workshops, trainings, and events, media, community

Year	Target	Actual
2007	1500	625

Output #2

Output Measure

- Conducted a series of family financial planning workshops for the Arkansas Department of Health.

Year	Target	Actual
2007	{No Data Entered}	325

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	Forty percent of the 1500 program participants will gain knowledge in managing their money.

Outcome #1

1. Outcome Measures

Forty percent of the 1500 program participants will gain knowledge in managing their money.

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	600	950

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Adults and youths are struggling to manage resources available to them.

What has been done

Workshops and seminars with adult and youth audiences increased understanding of financial literacy and helped them to become better managers of their resources.

Results

Nine hundred fifty participants learned budgeting, money management and resource allocation strategies as a result of this program.

4. Associated Knowledge Areas

KA Code	Knowledge Area
801	Individual and Family Resource Management
806	Youth Development

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Competing Programatic Challenges
- Other (Level of interest.)

Brief Explanation

Difficulty in attracting audiences to the program.

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- During (during program)

Evaluation Results

Evaluation conducted during the program indicated that all participants increased their knowledge and understanding of resource management.

Key Items of Evaluation

Program #22

V(A). Planned Program (Summary)

1. Name of the Planned Program

Farm Pond and Community Fishing Pond Management

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
134	Outdoor Recreation		100%		100%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.4	0.0	0.3
Actual	0.0	0.4	0.0	0.3

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	55228	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	46276	0	36275
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Research Activities Include: • Assessment of HSB requirements for water hardness in Arkansas farm ponds based on survival post-stocking using cage studies • HSB prey selection and competition with largemouth bass • Growth and condition of HSB under different prey communities • Influence of HSB on prey communities at two stocking densities. Extension Activities Include: • Produce recommendations for using HSB in ponds Research Activities Include: • Evaluation of the FCFP • Evaluation of the FDP • Evaluation of the HOFNOD Program Extension Activities Include: • HOFNOD teacher workshops • AGFC training • Assist AGFC with instructional activities and evaluation design • Organize and conduct Urban Fishing Symposium Extension activities include: • Conduct pond workshops and lectures • Maintain Farm Pond Management Website • Produce Farm Pond fact sheets and other resources • Write farm pond articles • Write and distribute monthly press releases for Extension Educator use • Conduct online and hands-on in-service training for Extension Educators

2. Brief description of the target audience

Commercial HSB producers Private impoundment owners and managers Extension Educators AGFC AR potential/current anglers HOFNOD Instructors

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	1830	9700	0	0
2007	742	15000	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Project Annual and Final Reports

Year	Target	Actual
2007	2	5

Output #2

Output Measure

- Number of Presentations and Scientific Meetings

Year	Target	Actual
2007	5	13

Output #3

Output Measure

- Number of Published Abstracts

Year	Target	Actual
2007	5	13

Output #4

Output Measure

- Number of Refereed Journal Articles

Year	Target	Actual
2007	1	4

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	Number of Research Recommendations Transferred to AGFC Staff
2	Number of Presentations at Scientific Meetings
3	Increse in fishing license sales in cities with AGFC programs
4	Increase in ponds that are designed, stocked, and managed correctly
5	Reduced number of pond problems
6	Percent increase in contacts rearding hybrid striped bass
7	Percent increase in requests for hybrid striped bass management recommendations
8	Percent increase in sales for sport fishing

Outcome #1

1. Outcome Measures

Number of Research Recommendations Transferred to AGFC Staff

2. Associated Institution Types

•1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	4	3

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The Arkansas Game and Fish Commission's Family and Community Fishing Program stocks channel catfish on a put and take basis biweekly from April to August at considerable per-stocking expense (manpower and vehicle costs). High cost of implementing put and take channel catfish stocking in FCFP program

What has been done

Evaluated impact of reduced channel catfish stocking frequency (with reduced cost) on fishing success and satifaction

Results

Stocking the same monthly density half as often did not affect angling success or satisfaction. Recommended reducing stocking frequency to once per month to save on manpower and transportation costs.

4. Associated Knowledge Areas

KA Code	Knowledge Area
134	Outdoor Recreation

Outcome #2

1. Outcome Measures

Number of Presentations at Scientific Meetings

2. Associated Institution Types

•1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	2	13

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Fishing derbies are used as recruitment/retention tools and to bring attention to public waters, but their efficacy has not been formally evaluated

What has been done

Conducted before-after utilization study at fishing derby locations and examine licensed histories and recruitment/retention potential of derby events

Results

Fishing derbies increased angling pressure at derby locations and may act as a retention tool for adult anglers at risk of not purchasing a fishing license. Derbies also expose youth to fishing, increasing the likelihood of recruitment as adults.

4. Associated Knowledge Areas

KA Code	Knowledge Area
134	Outdoor Recreation

Outcome #3

1. Outcome Measures

Increse in fishing license sales in cities with AGFC programs

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	100	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The Hooked on Fishing, Not on Drugs program was implemented in Arkansas to teach children angling skills and ethics, aquatic education, and positive life and social skills. Its effectiveness had not been formally evaluated.

What has been done

Participating HOFNOD teachers were surveyed to determine program effectiveness in improving student academic performance, behavior, participation in fishing, and increasing parental and community involvement in school-related activities. Also, curriculum unit usage was evaluated.

Results

Teachers reported that HOFNOD program had its most positive effect on student learning motivation, classroom behavior, fishing participation and parent/community involvement with in-school activities. It was recommended that underused modules be redesigned or dropped from the program to improve program efficiency.

4. Associated Knowledge Areas

KA Code	Knowledge Area
134	Outdoor Recreation

Outcome #4

1. Outcome Measures

Increase in ponds that are designed, stocked, and managed correctly

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:
Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	50	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

High cost of implementing put and take rainbow stocking in FCFP program

What has been done

Evaluated impact of reduced rainbow stocking frequency (with reduced cost) on fishing success and satisfaction

Results

Stocking the same monthly density half as often did not affect angling success or satisfaction. Recommended reducing stocking frequency to once per month to save on manpower and transportation costs.

4. Associated Knowledge Areas

KA Code	Knowledge Area
134	Outdoor Recreation

Outcome #5

1. Outcome Measures
Reduced number of pond problems

2. Associated Institution Types

•1890 Research

3a. Outcome Type:
Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	25	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
134	Outdoor Recreation

Outcome #6

1. Outcome Measures

Percent increase in contacts rearding hybrid striped bass

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	10	50

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Current FCFP program ponds do not have adequate spring and fall fisheries, and sunfish populations are stunting at undesirable sizes

What has been done

Evaluated angler acceptance and angling success of hybrid striped bass stockings during the fall. Also examined the influence of hybrid striped bass predation on stunted sunfish populations

Results

Anglers successfully targeted hybrid striped bass and displayed positive attitudes towards this species. Bluegill populations increased in mean length and condition following the introduction of hybrid striped bass.

4. Associated Knowledge Areas

KA Code	Knowledge Area
134	Outdoor Recreation

Outcome #7

1. Outcome Measures

Percent increase in requests for hybrid striped bass management recommendations

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	10	50

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Hybrid striped bass are difficult to haul and stock under certain environmental conditions, and mortality results in financial burdens and negative public perception

What has been done

Examined the potential factors influencing post-stocking survival of phase 2 and phase 3 hybrid striped bass; particularly acclimation rate, temperature, and water hardness.

Results

Changes in hardness and temperature did not result in hybrid striped bass mortality, nor did acclimation rate. We suggest that multiple factors act synergistically to reduce hybrid striped bass post-stocking survival.

4. Associated Knowledge Areas

KA Code	Knowledge Area
134	Outdoor Recreation

Outcome #8

1. Outcome Measures

Percent increase in sales for sport fishing

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	10	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Fishing derbies are used as recruitment/retention tools and to bring attention to public waters, but their efficacy has not been formally evaluated

What has been done

Conducted before-after utilization study at fishing derby locations and examine licensed histories and recruitment/retention potential of derby events

Results

Fishing derbies increased angling pressure at derby locations and may act as a retention tool for adult anglers at risk of not purchasing a fishing license.

4. Associated Knowledge Areas

KA Code	Knowledge Area
134	Outdoor Recreation

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Other (predation of stocked HSB; low survival of stocked fish; HSB do not control prey AGFC participation, AGFC implementation of management recommendations. Server failure, weather, computer viruses, Educator or manager failure to follow recommendations)

Brief Explanation

Weather-related fish kills; poaching

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- During (during program)

Evaluation Results

Key Items of Evaluation

Program #23

V(A). Planned Program (Summary)

1. Name of the Planned Program

Aquatic Plant Management in Arkansas Ponds

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
307	Animal Management Systems		100%		100%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.4	0.0	0.0
Actual	0.0	0.5	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	76099	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	46276	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Disseminate existing information through mass media, fact sheets, direct electronic communications, group presentations, and individual contacts with clientele.

2. Brief description of the target audience

CES Agriculture Agents, pond managers, natural resource managers, and others.

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	30	1500	0	0
2007	200	2000	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Publications

Year	Target	Actual
2007	2	2

Output #2

Output Measure

- Number of Presentations

Year	Target	Actual
2007	5	4

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	Number of farm pond owners implementing improved weed control
2	Number of farm pond owners learning how to control aquatic weeds
3	Number of farm pond owners experiencing fewer problems with aquatic weeds

Outcome #1

1. Outcome Measures

Number of farm pond owners implementing improved weed control

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	30	100

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

A major problem for many commercial aquaculturists and small pond owners is management of aquatic macrophytes. Thousands of acres of fishponds, livestock ponds, and ditches also have problems with aquatic vegetation. Aquatic plants thrive naturally in shallow nutrient-rich pond environments. But the natural environment is in conflict with the conditions which pond managers often seek to achieve. Aquatic plants tangle in the hooks and on the lines of recreational fishers. Aquatic plants interfere with seingin of commercial ponds. Aquatic plants clog intake manifolds on pumps in reservoirs used for irrigation. Ornamental pond owners are sometimes very particular about which aquatic plants are aesthetically pleasing and which aquatic plants are unwanted.

What has been done

Total number of persons directly contacted regarding aquatic plant management in 2007 were more than 300. Total number of indirect contacts wer more than 2000. During 2007 two posters and four formal workshop presentations were completed regarding aquatic plant management in Arkansas ponds.

Results

More than 100 pond owners implemented improved weed control, and over 50 pond owners reported fewer problems with aquatic weeds than in previous years.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #2

1. Outcome Measures

Number of farm pond owners learning how to control aquatic weeds

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	100	150

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

A major problem for many commercial aquaculturists and small pond owners is management of aquatic macrophytes. Thousand of acres of fishponds, livestock ponds, and ditches also have problems with aquatic vegetation.

What has been done

Total number of persons directly contacted regarding aquatic plant management were more than 300. Total number of indirect contacts were more than 2000. Two posters and four formal workshop presentations were completed regarding aquatic plant management in Arkansas ponds.

Results

As a result, more than 100 pond owners implemented imporved weed control, and over 50 pond owners reported fewer problems with aquatic weeds than in previous years.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #3

1. Outcome Measures

Number of farm pond owners experiencing fewer problems with aquatic weeds

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	15	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

A major problem for many commercial aquaculturists and small pond owners is management of aquatic macrophytes. Thousands of acres of fishponds, livestock ponds, and ditches also have problems with aquatic vegetation.

What has been done

Total number of persons directly contacted regarding aquatic plant management were more than 300. Total number of indirect contacts were more than 2000. Two posters and four formal workshop presentations were completed regarding aquatic plant management in Arkansas ponds.

Results

As a result, more than 100 pond owners implemented imporved weed control, and over 50 pond owners reported fewer problems with aquatic weeds than in previous years.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Other ()

Brief Explanation

{No Data Entered}

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- Before-After (before and after program)
- During (during program)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

Program #24

V(A). Planned Program (Summary)

1. Name of the Planned Program

Improving Largemouth Bass Fishing in the Arkansas River

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
134	Outdoor Recreation		0%		100%
	Total		0%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.0	0.0	1.3
Actual	0.0	0.0	0.0	0.9

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	0	71134
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

• Field collections of Arkansas River black basses from eleven pools during spring and fall seasons in 2004 and 2005 • Laboratory fish processing from 2004 through 2006 • Laboratory fish aging from 2004 through 2006 • Data analysis from 2005 through 2006 that include calculations of bass abundance, mortality, age structure, growth, and reproductive success. Conduct research to determine abundance of wild largemouth bass fingerlings in coves prior to stocking. We will randomly stock half of 10 coves. We will assess abundance of wild largemouth bass post stocking and compare mortality rates of largemouth bass fingerlings in stocked and unstocked coves. Conduct research to address the question of largemouth bass production in the Arkansas River and whether production has changed over time. We are also developing an approach to be able to compare production of bass among large USACE reservoirs, natural lakes, and pools of the Arkansas River. • Data examination and screening • Conduct statistical analyses for the study objectives.

2. Brief description of the target audience

•Fisheries managers of Arkansas The Arkansas Game and Fish Commission, Tournament largemouth bass anglers, Recreational anglers of Arkansas • AGFC fisheries biologists • AGFC fisheries managers.

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	0	0	0	0
2007	11	270	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Abstracts

Year	Target	Actual
2007	5	8

Output #2

Output Measure

- Number of Presentations

Year	Target	Actual
2007	5	8

Output #3

Output Measure

- Number of Refereed Journal Articles

Year	Target	Actual
2007	1	3

Output #4

Output Measure

- Number of Research Reports Submitted to Stakeholders

Year	Target	Actual
2007	1	1

Output #5

Output Measure

- Number of Non-peer Reviewed Publications

Year	Target	Actual
2007	1	1

Output #6

Output Measure

- Number of Peer Reviewed Publications

Year	Target	Actual
2007	2	1

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	The percent of AGFC fisheries biologists and managers that are informed about use of rotenone samples for scientific research topics through scientific meetings and conferences
2	Percent of AGFC fisheries biologists and managers who use the study results to solve management issues
3	Number of tournament largemouth bass anglers that learned what we know
4	Number of recreational anglers that learned what we know
5	Number of non-agency fisheries biologists that use what we know
6	Percent reduction in complaints to the AGFC regarding largemouth bass in the Arkansas River
7	Percent increase in largemouth bass tournaments on the Arkansas River
8	Number of AGFC personnel that learned what we know
9	Number of non-agency fisheries biologists that learned what we know
10	Number of AGFC personnel that use what we know

Outcome #1

1. Outcome Measures

The percent of AGFC fisheries biologists and managers that are informed about use of rotenone samples for scientific research topics through scientific meetings and conferences

2. Associated Institution Types

•1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	60	10

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

AGFC Fisheries Biologists and Managers need to know how to use rotenone sample results for management purposes.

What has been done

Rotenone sampling results have ben discussed at meetings and conferences

Results

AGFC Fisheries Biologists and Managers understand how to use rotenone survey results

4. Associated Knowledge Areas

KA Code	Knowledge Area
134	Outdoor Recreation

Outcome #2

1. Outcome Measures

Percent of AGFC fisheries biologists and managers who use the study results to solve management issues

2. Associated Institution Types

•1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	17	50

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

AGFC fisheries biologists need information to make good decisions on management issues

What has been done

Research on LMB populations and stocking in the Arkansas River has been presented at meetings these biologists have attended.

Results

AGFC fisheries biologists use this information to solve management issues.

4. Associated Knowledge Areas

KA Code	Knowledge Area
134	Outdoor Recreation

Outcome #3

1. Outcome Measures

Number of tournament largemouth bass anglers that learned what we know

2. Associated Institution Types

•1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	30	10

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Tournament LMB anglers are concerned about LMB fishing on the Arkansas River

What has been done

Information about LMB stocking and populations has been presented to AGFC, who manages the Arkansas River, and they pass this information to anglers.

Results

Tournament LMB anglers have more information about LMB populations in the Arkansas River

4. Associated Knowledge Areas

KA Code	Knowledge Area
134	Outdoor Recreation

Outcome #4

1. Outcome Measures

Number of recreational anglers that learned what we know

2. Associated Institution Types

•1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	50	20

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Recreational anglers are concerned about LMB fishing on the Arkansas River

What has been done

Information about LMB stocking and populations has been presented to AGFC, who manages the Arkansas River, and they pass this information to anglers

Results

Recreational anglers have more information about LMB populations in the Arkansas River

4. Associated Knowledge Areas

KA Code	Knowledge Area
134	Outdoor Recreation

Outcome #5

1. Outcome Measures

Number of non-agency fisheries biologists that use what we know

2. Associated Institution Types

•1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	40	16

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Non-agency fisheries biologists; LMB management in the resources they manage

What has been done

Information and research results have been presented at meetings these biologists have attended; AGFC also passes along this information.

Results

Non-agency fisheries biologists information can better manage the resources they handle

4. Associated Knowledge Areas

KA Code	Knowledge Area
134	Outdoor Recreation

Outcome #6

1. Outcome Measures

Percent reduction in complaints to the AGFC regarding largemouth bass in the Arkansas River

2. Associated Institution Types

•1890 Research

3a. Outcome Type:
Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	2	10

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

AGFC would like to reduce the number of complaints about LMB fishing on the Arkansas River

What has been done

Research on LMB populations and stocking has been presented to AGFC, who passes this information to the anglers.

Results

There is a reduced number of complaints to AGFC about LMB on the Arkansas River

4. Associated Knowledge Areas

KA Code	Knowledge Area
134	Outdoor Recreation

Outcome #7

1. Outcome Measures
Percent increase in largemouth bass tournaments on the Arkansas River

2. Associated Institution Types

•1890 Research

3a. Outcome Type:
Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	3	5

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Organizers of LMB fishing tournaments would like to increase the number of tournaments on the Arkansas River

What has been done

Research on LMB stocking and populations is presented to AGFC and other interested biologists, who then pass this information along to anglers and tournament organizers

Results

An increased number of fishing tournaments on the Arkansas River

4. Associated Knowledge Areas

KA Code	Knowledge Area
134	Outdoor Recreation

Outcome #8

1. Outcome Measures

Number of AGFC personnel that learned what we know

2. Associated Institution Types

•1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	30	153

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The Arkansas Game and Fish Commission, tournament bass anglers, and recreational bass anglers are concerned with the status of largemouth bass in the Arkansas River.

What has been done

Prior to this project, the Director of the Commission was planning to produce more largemouth bass fingerlings and larger largemouth bass fingerlings for supplemental stocking of the Arkansas River. Because of this project, the Commission has not devoted a larger portion of their hatchery resources to largemouth bass fingerlings production

Results

The size at which largemouth bass fingerlings are stocked has remained at ~50 mm rather than ~100mm. Both of these outcomes have allowed Commission hatchery resources to be focused on other critical issues, without a resultant decline in the quality of largemouth bass fishing in the Arkansas River.

4. Associated Knowledge Areas

KA Code	Knowledge Area
134	Outdoor Recreation

Outcome #9

1. Outcome Measures

Number of non-agency fisheries biologists that learned what we know

2. Associated Institution Types

•1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	40	85

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Non-agency fisheries biologists want to learn more about LMB management

What has been done

Information about LMB stocking and populations in the Arkansas River has been presented at meetings these biologists have attended; AGFC also passes along this information

Results

Non-agency fisheries biologists learned more about LMB management

4. Associated Knowledge Areas

KA Code	Knowledge Area
134	Outdoor Recreation

Outcome #10

1. Outcome Measures

Number of AGFC personnel that use what we know

2. Associated Institution Types

•1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	7	18

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

AGFC personnel need this information for management issues involving LMB on the Arkansas River

What has been done

AGFC personnel attend meetings where results of our research is presented

Results

More AGFC personnel can use the research results for Arkansas River LMB management issues.

4. Associated Knowledge Areas

KA Code	Knowledge Area
134	Outdoor Recreation

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Other (Please see explanation)

Brief Explanation

•Political, public relations, and economic factors are involved in almost any mangement adopted by AGFC (our primary stakeholder)•If AGFC research priorities change in the next few years, medium-term and long-term outcomes listed above could change also•Funding availability•Economy•Public policy•Government Regulations•Competing Public Priorities•The rotenone sample collection has been conducted ina consistent manner to avoid any sampling bias.•AGFC scientists and managers will be willing to continue to share the rotenone data and other information even if preliminary analyses indicate negative results about the rotenone data quality and rotenone sampling method•Fisheries managers have to consider other socioeconomic factors in the process of determination of fisheries management plans. Thus the study results would not effectively influence the fisheries management decision makings, regardless of quality of the research outcomes.

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- Before-After (before and after program)
- During (during program)

Evaluation Results

Key Items of Evaluation

Program #25

V(A). Planned Program (Summary)

1. Name of the Planned Program

Water and Environmental Quality

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
111	Conservation and Efficient Use of Water		20%		20%
112	Watershed Protection and Management		20%		20%
133	Pollution Prevention and Mitigation		20%		20%
204	Plant Product Quality and Utility (Preharvest)		20%		20%
403	Waste Disposal, Recycling, and Reuse		20%		20%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	1.1	0.0	1.3
Actual	0.0	0.5	0.0	1.5

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	87201	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	0	118069
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

We compiled weekly water quality measurements associated with swine waste treatment lagoon. We compiled weekly water quality measurements associated with constructed wetland cells and varied aquatic plants. We planned and executed a farm field day to demonstrate farm research and demonstration technologies; this project was included in the technologies demonstrated. We participated in at least two meetings regarding water quality issues surrounding the project. We also met with farmers and discussed aspects of the project. We are in the process of working on another factsheet related to the project.

2. Brief description of the target audience

The target audience includes but is not limited to small, limited resource landowners, underrepresented communities, and families.

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	90	180	40	80
2007	225	446	43	43

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	1	0	1

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Complete one peer reviewed research article every two years.

Year	Target	Actual
2007	1	0

Output #2

Output Measure

- Document the number of small, local and limited resource farmers that have been assisted with swine waste treatment, odor a

Year	Target	Actual
2007	5	6

Output #3

Output Measure

- Complete one fact sheet regarding water quality, swine waste management or environmental stewardship each year.

Year	Target	Actual
2007	1	0

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	The number of conservation practices utilized by swine farmers as a result of this project.
2	Increase awareness of environmental issues and policies that pertain to operating small swine farms.

Outcome #1

1. Outcome Measures

The number of conservation practices utilized by swine farmers as a result of this project.

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	3	5

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Local farmers were able to visit the project site and recieve written information regarding the UAPB swine waste treatment system. They were exposed to information which many were previously not aware of regarding swine waste treatment practices.

What has been done

Many questions were answered and information was disseminated.

Results

Farmers were made aware of regulations and practices for both raising swine (a related project by Dr. Gekara) and our demonstration method for dealing with swine waste on the farm. Policies driving the need for addressing swine waste were also addressed. Farmers were exposed to aquatic plants that help to deal with the swine effluent and secondary uses for the aquatic plants (varieties of water lilies).

4. Associated Knowledge Areas

KA Code	Knowledge Area
403	Waste Disposal, Recycling, and Reuse
204	Plant Product Quality and Utility (Preharvest)
133	Pollution Prevention and Mitigation
112	Watershed Protection and Management
111	Conservation and Efficient Use of Water

Outcome #2

1. Outcome Measures

Increase awareness of environmental issues and policies that pertain to operating small swine farms.

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:
Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	5	5

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Local farmers were able to visit the project site and receive written information regarding the UAPB swine waste treatment system. They were exposed to information which many were previously not aware of regarding swine waste treatment practices.

What has been done

Many questions were answered and information was disseminated.

Results

Farmers were made aware of regulations and practices for both raising swine (a related project by Dr. Gekara) and our demonstration method for dealing with swine waste on the farm. Policies driving the need for addressing swine waste were also addressed. Farmers were exposed to aquatic plants that help to deal with the swine effluent and secondary uses for the aquatic plants (varieties of water lilies).

4. Associated Knowledge Areas

KA Code	Knowledge Area
133	Pollution Prevention and Mitigation
403	Waste Disposal, Recycling, and Reuse
111	Conservation and Efficient Use of Water
204	Plant Product Quality and Utility (Preharvest)
112	Watershed Protection and Management

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Public Policy changes

Brief Explanation

No external factors adversly affected the project during this time period.

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- During (during program)

Evaluation Results

A survey of the 2007 UAPB farm field day revealed a high level of interest in several farm research/demonstration projects. The swine waste treatment project was one of the projects which participants indicated interest in and a desire to learn more regarding the project.

Key Items of Evaluation

Farm field day participants demonstrated a high level of interest in the swine waste treatment project.
Farm field day participants indicated an interest in learning more about the swine waste treatment project.

Program #26

V(A). Planned Program (Summary)

1. Name of the Planned Program

Youth Fishing and Aquaculture Education

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
806	Youth Development		100%		100%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.6	0.0	0.0
Actual	0.0	0.2	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	11918	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	11275	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Provide 4-H approved youth fishing education program materials to county agents. Maintain a youth fishing trailer and train agents in its use. Also add fishing education module to the trailer for county agents to use. Work with 4-H and county agents directly to implement new or improved sportfishing and aquatic curriculums, which include Baitcasting and Reel Into Sportfishing competitions. Organize and conduct workshops through CE aents that deal with aquatic education and 4-H O'Rama activities. Continue to provide assistance with county, regional, and state O'Ramas. Two types of systems will be set up; one with very low technology and a second with better technology. Raise all tilapia needed for the schools during the summer and overwinter broodstock for spawning the following year. Some small fish should also be overwintered to re-supply systems that fail.

2. Brief description of the target audience

Youth

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	100	100	1000	400
2007	50	80	320	125

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Conducted workshops that included new or improved sportfishing and aquatic curriculums incorporating Baitcasting and Reel

Year	Target	Actual
2007	{No Data Entered}	320

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	Number of County Extension agents using the aquatic education fishing trailer for youth fishing activities
2	Number of students participating in events related to the aquatic education fishing trailer for youth fishing activities
3	Number of students participating in specific aquatic education events, such as 4-H O'Rama Events, aquatic and fishing workshops, and educational derbies
4	Number of County Agents using the fishing education modules
5	Number of students participating in events involving the fishing education module
6	Number of tilapia delivered to teachers
7	Number of teachers using tilapia
8	Number of teachers receiving aquaculture education newsletter
9	Number of schools visited annually
10	Number of contacts by email and telephone calls from teachers related to recirculation systems
11	Number of teachers participating in aquaculture workshop

Outcome #1

1. Outcome Measures

Number of County Extension agents using the aquatic education fishing trailer for youth fishing activities

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	25	25

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Youth education is an integral part of a comprehensive education program at the local/county level. It is the role of Extension Specialists to augment that effort.

What has been done

The Aquculture/Fisheries department maintains a fishing education trailer for county agents to use for youth activities.

Results

Twenty five County Extension Agents have taken advantage of the opportunity to use the fishing trailer.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #2

1. Outcome Measures

Number of students participating in events related to the aquatic education fishing trailer for youth fishing activities

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	1300	1300

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Aquatic resource education enhances a students' respect for their environment and respect is gained for outdoor type activities

What has been done

The Aquaculture/Fisheries department makes available the aquatic education fishing trailer for youth fishing activities.

Results

Thirteen hundred youth have had the opportunity to utilize the fishing trailer.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #3

1. Outcome Measures

Number of students participating in specific aquatic education events, such as 4-H O'Rama Events, aquatic and fishing workshops, and educational derbies

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	200	320

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Respect for the environment and aquatic resources is important for youth.

What has been done

O'Rama events were held at the county level, Chicot County, referred to locally as Big B Day. Additionally, the Aquatic Sciences Day was held at the UAPB Aquaculture/Fisheries Research Center where 18 schools participated in various aquatic related events.

Results

At the county level, 40 youth participated in the baitcasting activity. Two of those youth were elgible to participate in the District O'Rama event. Additionally, 300 youth participated in events at the Aquatic Sciences Day.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #4

1. Outcome Measures

Number of County Agents using the fishing education modules

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	15	15

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Aquatic resource education is an important part of a county's educational program.

What has been done

The fishing education module is made availble through the Department of Aquaculture and Fisheries for use in the education programs.

Results

Fifteen County Agents have used the education modules.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #5

1. Outcome Measures
Number of students participating in events involving the fishing education module

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	150	150

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Aquatic resource education is an important part of the development of a student.

What has been done

Fishing education modules are made available through the Department of Aquaculture and Fisheries.

Results

About 150 students have participated in events involving the fishing education module.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #6

1. Outcome Measures

Number of tilapia delivered to teachers

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	1000	1000

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Tilapia are better suited for use in recirculating aquaculture systems

What has been done

UAPB provides tilapia for these systems

Results

Fish are picked up and delivered from the UAPB facility. There are many of these systems in operation in Arkansas schools

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #7

1. Outcome Measures

Number of teachers using tilapia

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	10	10

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Tilapia are excellent fish for such systems having resistance to water quality and disease problems.

What has been done

Tilapia are obtained at the UAPB Aquaculture Facilty.

Results

About ten teachers are using tilapia in these systems.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #8

1. Outcome Measures

Number of teachers receiving aquaculture education newsletter

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	25	25

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Arkansas Aquafarming is a newsletter developed by the UAPB Aquaculture/Fisheries Center. The publication is research journal quality.

What has been done

The publication is available worldwide electronically and hard copies upon request. These are distributed through the County Extension Service

Results

Twenty five teachers are receiving this newsletter to use the helpful information in classrooms.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #9

1. Outcome Measures

Number of schools visited annually

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	5	6

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Many students are not aware of the Aquculture/Fisheries program and the many opportunities they can received through the program.

What has been done

Visits are made to local schools with agriculture/science programs.

Results

Students were made aware of the Aquaculture Program and programs that are made available to them for participation like the Aquatic Sciences Day.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #10

1. Outcome Measures

Number of contacts by email and telephone calls from teachers related to recirculation systems

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	200	200

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Recirculation systems is a good avenue to teach students aquatic education hands on. These units are smaller than pond and are not expensive to operate.

What has been done

Personal visits were made to the local high school recirculation system project. Additionally, answered eight requests for information on operation of these systems.

Results

We were able to solve production and water related problems. Calls were to advise schools on where to locate tilapia for these systems and problems that may be encountered.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #11

1. Outcome Measures

Number of teachers participating in aquaculture workshop

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	20	20

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Aquaculture is a well established industry in Arkansas. Workers for this industry need training and the vocational agriculture program is an excellent means to receive such training.

What has been done

Annual workshops are for Arkansas Vocational Agriculture Instructors

Results

Twenty plus instructors participated in the workshops provided.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Other (Global economic situation changes, regulatory laws change)

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- Before-After (before and after program)
- During (during program)

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}

Program #27

V(A). Planned Program (Summary)

1. Name of the Planned Program

Cropping Systems

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
205	Plant Management Systems		100%		100%
	Total		100%		100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	2.8	0.0	0.5
Actual	0.0	2.3	0.0	0.3

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	70105	0	30135
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	384229	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The Conventional verses Round-up Ready soybean demonstration was rotated from field 11D (7.2 acres) and 11E (6.8 acres) to field 2B which also has a Calloway silt loam soil (Fine-silty, mixed, active, thermic Aquic Fraglossudalfs). The conventional and the Round-up Ready fields were planted on June 13, 2007 with Delta Pine & Land variety 5989 and Delta Grow variety 5830 respectively. The Hutchinson variety was not available in 2007. Therefore, the Delta Pine & Land variety 5989 was selected because it has similar growth characteristics and maturity habit to Delta Grow variety 5830. Yield on these soybeans was severely depressed due to moisture stress. The soybeans were not irrigated during the growing season due to a failure to get an irrigation pipeline installed. The contractor took more than 90 days to install the line. The lack of water caused the yield to be very low and not representative of previous years. Therefore the data was not reported.

The No-Till demonstration was planted in soybeans (Schlinger 495 RC variety) on June 6, 2007 in field 11F which has a Calloway silt loam soil. The no till soybeans cost $148/ acre to produce. The cultural practices (burn down weed at planting with Round-up original Max at 32 oz/ac x 2; planting no till planter on 30” rows, spray with roundup 22 oz rate x 2 to control weeds during growing season and irrigate 1 time) cost 121/acre and harvesting cost $27/acre for a total of $148/acre. The soybeans shattered severely even though the stalks were still green prior to harvesting. The shattering reduced the yield by an estimated 30 – 40 %. The net profit per acre (income-costs) was $5.09. If we use the figure of 30% loss, the increase in yield would be 4.56 bushels/acre or 19.56 bushels/acre with a net income of $51.65/acre.

No field days were conducted during FY07. Field days are held on a biennial basis and the next one is scheduled for August 2008. However, about 60 farmers made ad hoc visits to the farm sites to see ongoing research and demonstration plots during FY07. Also, a signing ceremony for a native grass project initiated with the U.S. Army Corps of Engineers was held on the farm site and approximately 150 individuals attended.

Indirect contacts were made through newspaper articles, newsletters, radio broadcasts, and highlights provided to alumni and friends of the university. Also information was provided for the university’s annual report.

2. Brief description of the target audience

LRF and SDF serviced by the UAPB as well as other farmers who attend field days and/or visit the SFO-WWMC. Other audiences include policy makers, Extension educators, Natural Resources Conservation Service employees, U. S. Army Corps of Engineers employees, home owners and the general public.

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	5000	10000	400	4000
2007	2100	2500	240	1200

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- 1. The number of site visits by farmers 2. The number of participants that attend field days 3. Number of fact sheets developec

Year	Target	Actual
2007	50	75

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	Short term outcome will be measured by the number of LRF and SDF that attend field days and observe BMP demonstrations and the knowledge gained by participants.

Outcome #1

1. Outcome Measures

Short term outcome will be measured by the number of LRF and SDF that attend field days and observe BMP demonstrations and the knowledge gained by participants.

2. Associated Institution Types

- 1890 Extension
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	50	75

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

In a stakeholders meeting on February 12, 2004, participants said the lack of rapid adoption of new best management practices is one of the factors that is likely to affect the survival of Limited Resource Farmers (LRFs) and Socially Disadvantaged Farmers= (SDFs) in the future; because, these farmers generally do not adopt new Best Management Practices (BMPs) at a rapid rate. Since these farmers do not adopt BMPs at a rapid rate their yield and bottom line suffer. If this trend continues, the decline in the number of LRF and SDF is bound to continue. The University of Arkansas at Pine Bluff (UAPB) is committed to assisting these farmers because they are our clientele base. Therefore, UAPB conducts demonstrations and trials to prove that the adoption of BMPs is a good investment by LRFs and SDFs.

What has been done

To demonstrate the use of BMP's to LRFs and SDFs , UAPB planted a conventional verses Round-up Ready soybean demonstration on the university's Lonoke farm site on a Calloway silt loam soil (Fine-silty, mixed, active, thermic Aquic Fraglossudalfs) on June 13, 2007 with Delta Pine & Land variety 5989 (conventional) and Delta Grow variety 5830 (Round-up Ready) soybeans. This was the third year for the study. However, no data was collected due to drought conditions and the inability to get irrigation water to the production site.

A No-Till demonstration was the second BMP practice put in place on the Lonoke site. UAPB planted soybeans (Schlinger 495 RC variety) on June 6, 2007 in field 11F which has a Calloway silt loam soil. Data was collected on this site and will be distributed through the 2501 small farm program at UAPB and at the 2008 field day at the Lonoke site which is scheduled for August 2008.

Results

A visit with the 2501 Small Farm Program Director at UAPB revealed that more than 100 LRF's and SDFs are using Round-up Ready (RR) soybeans today. These farmers did not use RR soybeans 3 years ago. UAPB has demonstrated that RR soybeans are cheaper to produce on a per acre basis than conventional soybeans. This increases the farmers' bottom line and helps to clean up weed infested fields that may have been problematic in the past.

The adoption of no-till production has been slower than the adoption of RR technology. LRFs and SDFs tend to use the equipment that they have on hand. However, they have decreased the number of trips across the field whenever possible. The high cost of no-till planters and drills is likely to be a limiting factor in the adoption of a no-till system of production.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Competing Programatic Challenges

Brief Explanation

The weather had a profound influence on the crop production year. The cold and wet spring delayed planting; crops had adequate moisture during June; drought conditions prevailed during July and August; and September brought rains that caused soybeans to become green again.

The RR soybeans were not irrigated during the growing season due to a failure to get an irrigation pipeline installed. The contractor took more than 90 days to install the line. The lack of water caused the yield to be very low and not representative of previous years. Therefore the data was not reported.

Soybeans in the no-till demonstration became green again after September rains, this delayed harvest and the soybeans began to shatter and yields were reduced 30-40%. The good price ($10.21/Bushel) was the only thing that allowed the sub-par yielding soybeans to break even.

Our estimate of the number of contacts was overly ambitious and was adjusted during the remainder of the five year period.

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- During (during program)

Evaluation Results

Key Items of Evaluation

Program #28

V(A). Planned Program (Summary)

1. Name of the Planned Program

1890 Family and Child Development Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
802	Human Development and Family Well-Being		40%		0%
806	Youth Development		60%		0%
	Total		100%		0%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	1.6	0.0	0.0
Actual	0.0	0.2	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	197938	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	153782	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Two focused areas were addressed in the 1890 Family and Child Development Program. These included Teens on the Go and the Young Scholars Program. Teens on the Go is a newsletter series that was developed for students in grades 7-12. FY 2007 marked the 29th year that this newsletter has been written. Six issues of the newsletter were written. These included: 1) The Art of Giving and Receiving Criticism, 2) How to Avoid Gangs, 3) Abstience: A Personal Decision, 4) Why Pot's Not Cool: How Marijuana Messes With Your Brain and Body, 5) How to Reconnect With Your Family, and 6) What You Should Know About Inhalants. Children in the Young Scholars Program participated in an after-school program and learned math and science skills. Their parents met in weekly group meeting and learned parenting education, stress management, coping and job-related skills, family relationships, and eocnomic- and self-sufficiency skills.

2. Brief description of the target audience

The target audience in the 1890 Family and Child Development focused programs included: teenagers in grades 7-12 for the newsletter, Teens on the Go. Parents and their children (ages 6-15) who live in housing projects in Monroe and Lee Counties were enrolled in the Young Scholars Program.

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	78	0	84	10000
2007	57	0	67	58740

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- We will provide math and science workshops for children in the Young Scholars Program. Parents will receive training in parer

Year	Target	Actual
2007	162	124

Output #2

Output Measure

- Children enrolled in the Young Scholars Program participated in four special workshops on math and science taught by unive

Year	Target	Actual
2007	{No Data Entered}	67

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	Forty percent of children in the Young Scholars Program will have an increase in school performance and forty percent of families will report being able to meet the financial obligations of their families.

Outcome #1

1. Outcome Measures

Forty percent of children in the Young Scholars Program will have an increase in school performance and forty percent of families will report being able to meet the financial obligations of their families.

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	62	57

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

An increased number of poor children experience difficulty in many school subjects especially reading, math and science. Because of inadequate readiness for school, catching up appears to be a problem for many poor children They tend to lag behind in math, science and reading. Many poor families work at jobs that pay only minimun wage which is not enough to keep up with inflation. Families experiencing stress and deprivation caused by poverty are more likely to face problems in being responsible parents.

What has been done

A Young Scholars Program in its 10th year addresses many of these problems. Special emphasis in the program is on math a science skills through using agriculture and human sciences subject matter. Special wroks in math and science are conducted during the year as well as a week long somummer day camp designed to strenghthen math and science skills. Parents have participated in a series of classes on money management to help them develop skills in budgeting and controlling debt. Five parents have participated with the Good Faith Fund in saving money.

Results

Fifty-seven parents are enrolled in the program and participated in weekly group meetings. The majority of parents are employed full time. They are using knowledge gained to control debt and stretch the family's income. Published honor rolls, conferences with teachers and parents indicate that student performance has increased. All children in the program passed the state bench-mark exams.

4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being
806	Youth Development

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Appropriations changes
- Populations changes (immigration,new cultural groupings,etc.)

Brief Explanation

As the economy began to change, some parents' financial situation changed. Some lost jobs and had to move out of the housing projects. The program had less children and parents to work with.

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- During (during program)
- Case Study

Evaluation Results

In FY 2007 students in 30 counties read Teens on the Go. Total contacts with teens were 58,740. Students indicated that the newsletter helps them make better decisions. One student said: "Teens on the Go helps you value and respect other people. the teach you a lot about yourself. they prepare you to make wise decisions about issues you face. The issue on How to Avoid Gangs came at a good time in my life." All children enrolled in the program passed the required comprehensive exams in school. Staff observed increased performance in math and science. Parents reported increased knowledge in stretching the family's income and in controlling debt.

Key Items of Evaluation

The number of total contacts with teens in grades 7-12 and achievement of children and parents in the Young Scholars Program.

Program #29

V(A). Planned Program (Summary)

1. Name of the Planned Program

Arkansas Ag Adventures - Agricultural Awareness

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
806	Youth Development		100%		0%
	Total		100%		0%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	0.5	1.1	0.0	0.0
Actual	0.0	0.8	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	42551	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Activities include field days at the UAPB Small farm Outreach and Water Management Center, camps at the Arkansas 4-H Center, exhibits at educational fairs, and community and classroom workshops.

2. Brief description of the target audience

Although all youth and adults can be a part of the program, special emphasis is given to youth in grades 4-6 and their formal educators.

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	100	10	2000	200
2007	120	50	2000	1000

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- To increase the understanding of agriculture and its benefits to the general public.

Year	Target	Actual
2007	300	3000

Output #2

Output Measure

- To encourage youth to seek careers in agriculture, math, science and engineering through field days at the farm.

Year	Target	Actual
2007	5	350

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	Outcome Name
1	To increase the understanding of agriculture and its benefits to the general public.
2	To encourage youth to seek careers in the fields of agriculture, science, math, engineering, and technology through field days at the center.

Outcome #1

1. Outcome Measures

To increase the understanding of agriculture and its benefits to the general public.

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	300	3120

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The general public and specifically youth have no direct contact with agriculture and lack the simplest knowledge of how agriculture affects their daily lives; for instance where there food comes from. It is important that we all increase our understanding of agriculture, its benefits, its unique challenges and how it affects our global economy. The more we can increase the understanding of agriculture and its role in our society the more we can decrease the effects of misunderstanding in the popular press.

What has been done

Activities include field days at the UAPB Small farm Outreach and Water Management Center, camps at the Arkansas 4-H Center, exhibits at educational fairs, and community and classroom workshops. Special emphasis is given to youth in grades 4-6 and their formal educators and organized 4-H clubs.

Results

Youth participating in the farm field day programs evaluated the program by sending essays and drawings to the youth agriculture associate. The results showed the youth had a positive experience and they learned more about agriculture. Some 4-H programs were evaluated using short pre-post test surveys testing their subject knowledge. Each survey showed an improvement in immediate subject matter knowledge.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #2

1. Outcome Measures

To encourage youth to seek careers in the fields of agriculture, science, math, engineering, and technology through field days at the center.

2. Associated Institution Types

•1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	5	350

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

With increasing opportunities for fields of study availabale to today's youth, a declining number are chooseing agriculture or related fields as career paths. Continual emphasis must be placed on encouraging youth to choose agricultureand making them aware of the opportunities in this field so that jobs agriculturecan be filled with some of the brighest minds.

What has been done

Activities include field days at the UAPB Small farm Outreach and Water Management Center, camps at the Arkansas 4-H Center, exhibits at educational fairs, and community and classroom workshops. Special emphasis is given to youth in grades 4-6 and their formal educators and organized 4-H clubs.

Results

Several youth have chosen courses of study in agriculture in college and additional youth have chosen an agriculture project area to pursue in 4-H as a result of participating in our programs.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Appropriations changes
- Competing Programatic Challenges

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- Retrospective (post program)
- Before-After (before and after program)

Evaluation Results

Youth participating in the farm field day programs evaluated the program by sending essays and drawings to the youth agriculture associate. The results showed the youth had a positive experience and they learned more about agriculture. Some 4-H programs were evaluated using short pre-post test surveys testing their subject knowledge. Each survey showed an improvement in immediate subject matter knowledge.

Key Items of Evaluation